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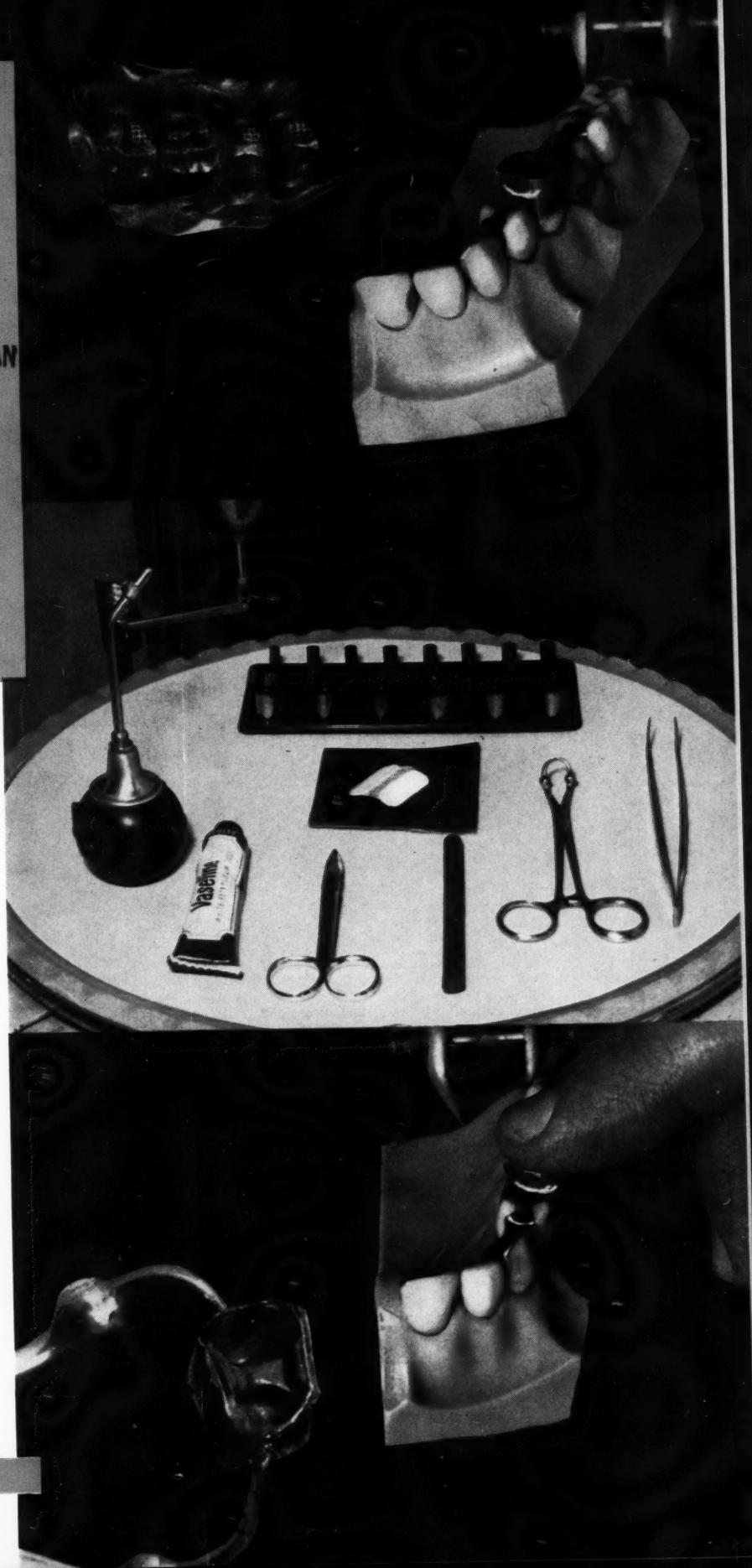
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TENNAC

“A porcelain of exquisite beauty”

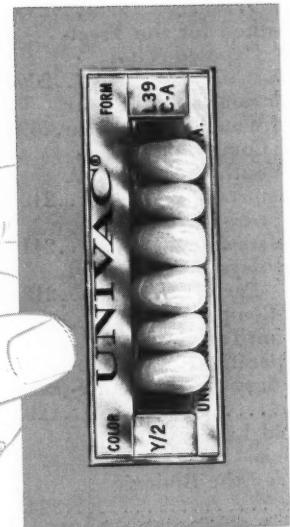
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About Our CONTRIBUTORS

MAX B. WINSLOW, D.D.S. (University of Michigan, College of Dentistry, 1924) emphasizes periodontia in his practice. Doctor Winslow was chief of the section of periodontia and attending dentist at Sinai Hospital for five years, and has published several articles on a variety of dental subjects. His first article to appear in *DIGEST* is **FIXED BRIDGE AND SPLINT ASSEMBLY TECHNIQUE** in the current issue.

NORMAN D. HYLAND, B.S. (Spring Hill College, 1938), D.D.S. (Loyola University, New Orleans, 1949) is engaged in the practice of general dentistry. Doctor Hyland publishes in *DIGEST* for the first time in the current issue. His article is **A NEW METHOD FOR THE TREATMENT OF EXPOSED VITAL PULPS**.

LOUIS J. PEREIRA, Jr., D.D.S. (New York University College of Dentistry, 1940) emphasizes oral surgery in his practice. Doctor Pereira is consultant in oral surgery in Wing Memorial Hospital, Palmer, Massachusetts, and Mary Lane Hospital, Ware, Massachusetts. Doctor Pereira reports a case in oral surgery which came to his attention, **TRAUMATIC COMMUNICATION BETWEEN MOUTH AND NOSE**.

COYLE B. THOMAS, D.D.S., (St. Louis University, School of Dentistry, 1929), presents the concluding installment of his illustrated three-part article, **MULTIPLE INLAYS, CROWNS, AND BRIDGES**.

IRVING A. ELLMAN, D.D.S. (New York University Dental School, 1936) a general practitioner, first published in *DIGEST* in 1936. Doctor Ellman has invented and patented an instrument used in the induction of trichlorethylene analgesia. His current article is **A PERFECT COMPOUND INLAY IMPRESSION TECHNIQUE**.

WILLIAM EARL DENNARD, B.S. (University of New Mexico, 1936), D.D.S. (University of Kansas City, School of Dentistry, 1941) specializes in oral surgery. For his first appearance in *DIGEST* Doctor Dennard presents an illustrated article, **PARTSCH OPERATION FOR A GLOBLUMAXILLARY CYST**.

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EDWARD J. RYAN, B.S., D.D.S., Editor

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FIXED BRIDGE and Splint

Assembly Technique

MAX B. WINSLOW, D.D.S., Detroit

DIGEST

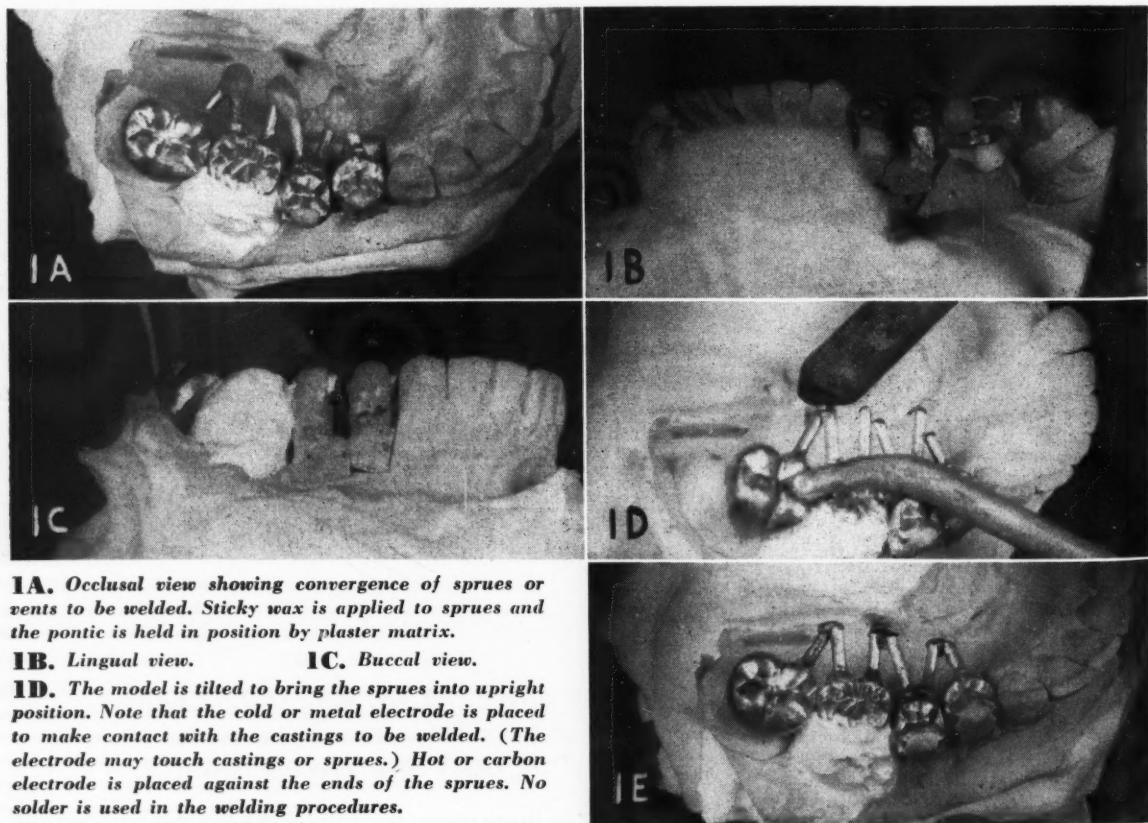
The conventional method of assembling fixed bridges and splints often presents the problem of maintaining the precise fit of abutment and splint castings after soldering. This difficulty arises from the dimensional changes that occur in the refractory investment model during the soldering procedure. In many instances castings which are satisfactory do not go to place after

being soldered together. This makes it necessary to allow reline ment of teeth to take place before final cementation of the prosthesis, or to reassemble the case and solder one joint at a time with reseating and reinvesting between each soldering operation. Either of these alternatives is time consuming and does not provide optimal results. The technique described in this procedure eliminates the need for investing in a refractory material.

Technique

The soldering is done in the Bunsen burner with the individual castings held together by welded sprues that are left attached to the abutment, splint, and pontic castings.

Sprue May be Added—The sprueing of the wax patterns is done so that the sprues converge. If the thickest part of the pattern does not happen to be at the lingual, buccal or labial surface and the casting sprue must be placed at another surface of the pattern, an additional sprue or vent is added to the desired area. Twelve or 14-gauge round wax is used for this purpose.

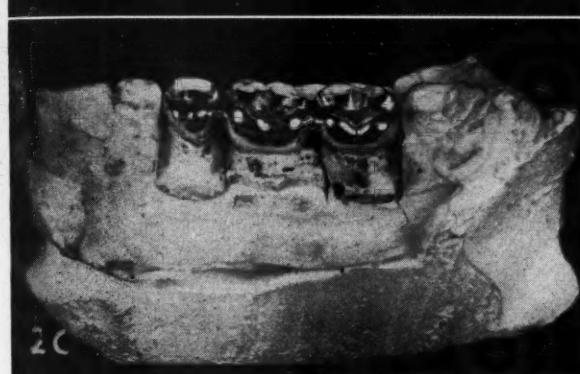




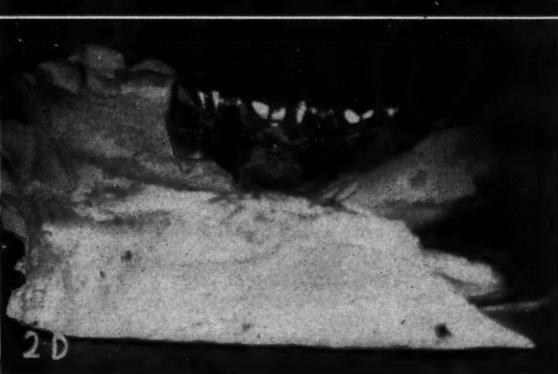
2A



2B



2C



2D

2A. Occlusal view showing the sprues bent together ready for welding.

2B. The sprues after being welded together.

2C. Occlusal view of splint inlays after soldering and welded sprues are cut away.

2D. Lingual view of splint inlays after soldering.

Articulation Checked on Model— After the patterns are burned out and the castings made, the restorations are assembled on the model and the articulation is checked. Before this is done, the casting sprue is cut off at the casting in the usual way, but the sprues to be welded are cut at the button.

Sprues Luted Together—If the welding sprues do not touch suffi-

ciently, they are bent together with a three-pronged clasp or bar-bending pliers. The sprues are then luted together with sticky wax and the cast-

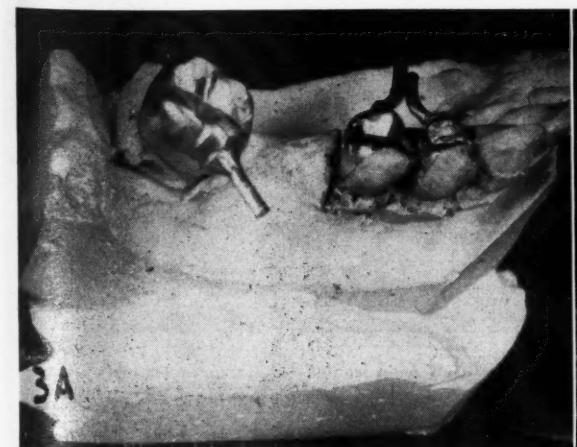
ings are fixed in position by a plaster matrix poured on the side opposite the sprues. This step is necessary only when pontics are involved in the assembly.

3A. Bicuspid splint and abutment inlays with sprues bent together for welding; reverse three-quarter crown with the sprue converging toward the edentulous area.

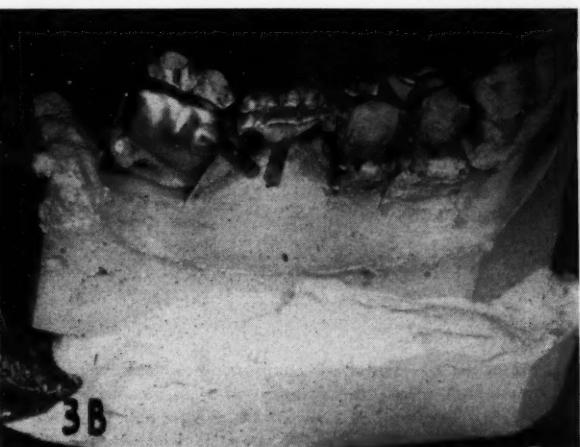
3B. The pontic with the sprue converging toward the molar abutment.

Welding Procedure

The sticky wax is removed by heating in the Bunsen burner and the sprues are welded together in the following way:



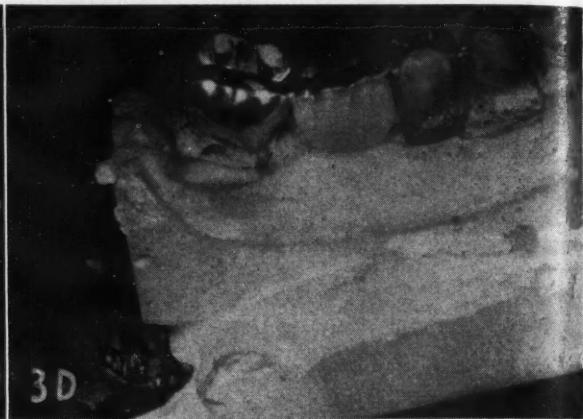
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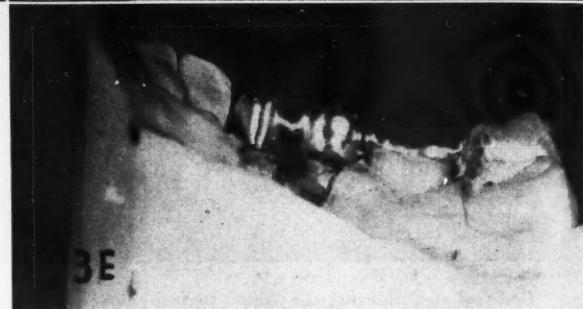
3B



3C. Sprues after welding. (This series does not show the plaster matrix used to hold pontic in position.)



3D. Buccoocclusal view after soldering; welded sprues cut away.



3E. Lingual view after soldering.

1. The model is placed in a spring clamp model vise and the vise is tilted so that the sprue ends are in an upright position.

2. The sprue ends are lightly fluxed with paste electro-welding flux.

3. The cold or metal electrode is placed so that it touches two of the sprues or castings. The hot or carbon electrode is applied to the ends of the

sprues and the welding is done. Note that no solder is used in the welding procedure.

The control setting varies with different welding machines; the optimal setting must be determined so that the welding can be done without generating too much heat and dessicating the model.

4. The welding procedure is re-

peated until all the sprues are welded.

Final Steps—1. The welded castings are removed from the model and the joints are soldered in the Bunsen burner. The solder should be the one indicated for the type of gold alloy used for the castings. For the hard or Type C alloy, .615 fine solder is used.

2. The soldered case is replaced on



4. Adaption of procedure to multiple splint and fixed bridge assembly. Note the replacement of sprues buccally and lingually to accommodate standard three-quarter crowns, reverse three-quarter crowns, full crowns, and pontics. The



sprues have all been welded except three on right side.
5. Fixed bridge and splint assembly being soldered in Bunsen burner after the sprues have been welded together. Note that the case is not invested in a refractory material.

the model and the articulation is checked.

3. If the relationships are not correct, the solder may be melted or cut and the case resoldered after the necessary corrections are made.

4. The welded sprues are cut off and the case is polished and finished.

Original Relationships Retained — This technique allows the individual abutment, splint, and pontic castings to remain in their original relation-

ship to one another. As a result the soldered case will go to place as readily as the individual restorations did before soldering.

19457 Livernois Avenue

Oral Cancer

APPROXIMATELY 15 per cent of the yearly death rate from cancer is attributable to malignant tumors of the mouth. The most common of these lesions are squamous cell carcinomas. Such symptoms as pain and ulceration are not present initially and are indicative of ad-

vanced stages of disease. Fibrosarcoma occurs in a younger age group than the epidermoid tumors. It enlarges rapidly and may destroy the bony structures. Plasmacytoma and multiple lymphosarcomas are uncommon. Oral malignant melanoma may occur on the

gingiva and is known to grow and infiltrate quickly. In lesions of the mouth biopsy is essential for diagnosis and for differentiation from benign lesions.

From *The Cancer Bulletin* 8:59 (May-June) 1956.

ANNOUNCEMENT OF BOOKS RECEIVED

DENTAL HEALTH EDUCATION, By Frances A. Stoll, Ed.D., R.D.H., Philadelphia, Lea & Febiger, 1957. Price \$4.50.

INTRODUCTORY PSYCHOSOMATIC DENTISTRY, By John B. Manhold, Jr., B.A., D.M.D., New York, Appleton-Century-Crofts, Inc., 1956. Price \$5.00.

APPLIED DENTAL MATERIALS, By John N. Anderson, B.D.S. (Sheff.), Springfield, Illinois, Charles C Thomas, Publisher, 1956. Price \$7.50.

THE OFFICE ASSISTANT IN MEDICAL OR DENTAL PRACTICE, By Portia M. Frederick, and Carol Towner, Philadelphia, W. B. Saunders Company, 1956. Price \$4.75.

DENTAL MECHANICS FOR STUDENTS, By John Osborne, Ph.D., M.D.S., F.D.S., R.C.S., Fourth Edition, London, Staples Press Limited, 1956. Price \$6.50.

THE DENTAL BUSINESS OFFICE, By C. Edward Rutledge, D.D.S., and Edward Winsor, Philadelphia, Lea & Febiger, 1956. Price \$3.50.

CLINICAL ENDODONTICS, By Frederick Sommer, D.D.S., M.S.; F. Darl Ostrander, A.B., D.D.S., M.S.; and Marcy C. Crowley, A.B., M.S.P.H., Philadelphia, W. B. Saunders Company, 1956. Price \$10.50.

CLINICAL OPERATIVE DENTISTRY, By William John Simon, D.D.S., Philadelphia, W. B. Saunders Company. Price \$9.50.

THE PHYSICIAN-WRITER'S BOOK, By Richard M. Hewitt, A.M., M.D., Philadelphia, W. B. Saunders Company, 1957. Price \$9.00.

EXPECTANT MOTHERHOOD, By Nicholson, J. Eastman, M.D., Third Edition, Boston, Little, Brown & Company, 1957. Price \$1.75.

THE STRESS OF LIFE, By Hans Selye, M.D., New York, McGraw-Hill Book Company, Inc., 1956. Price \$5.95.

THE AMERICAN FLUORIDATION EXPERIMENT, By F. B. Exner, M.D., and G. L. Waldbott, M.D., New York, The Devin-Adair Company. Price \$3.75.

A New Method for the Treatment of EXPOSED VITAL PULPS

NORMAN D. HYLAND, D.D.S., Mobile, Alabama

D I G E S T

The subject of this article is highly controversial and contrary to present day teaching. In general it is believed that surface contact with bacteria always means contamination and infection. Clinical evidence disproves this belief. The technique discussed here concerns only vital healthy dental pulps, so that diagnosis of the status of health of the pulp is of first importance. To question modern "aseptic" techniques in endodontia will inevitably result in severe criticism. For that reason, among others, objective evidence is presented in the form of x-rays. The answer to controversy will be found in clinical comparison of this technique with others.

Search Instituted for Pulp-Capping Technique

An interest in pulp capping and a lack of success from trying all known methods of pulp capping led to a search for a more practicable and successful technique.

Patients Questioned—A study was made of the x-rays of the patients' teeth which had exposures, and the patients were questioned about the responses of their teeth to various stimuli. In most instances the patient had known of nothing wrong with his tooth except the presence of a cavity. From this it was reasoned that there was no infection in the vital pulp even though there was a carious exposure.

Effect of Saliva in Infection—It was also observed that some pulps

exposed to saliva for a long time remained without infection.

Inflammation may be Reversible—Inflammation is always present in the pulps of teeth with carious exposures, but it is not always the irreversible type.

Role of Saliva—It is known that saliva has other purposes than the part it plays in digestion. It is generally accepted that while in the oral cavity it has a bactericidal or bacteriostatic action, and aids considerably in the healing of oral tissues. One authority has stated that it has long been the opinion among eye, ear, nose and throat specialists, that secretions in the nasopharynx possess bactericidal qualities.¹ Where else in the human body, except in the presence of saliva, would it be possible to complete surgery and use various types of metal implants, with so little unfavorable reaction? The possibility was suggested that saliva should be used in pulp capping.

Saliva Used in Pulp Capping—In 1950 the author began using saliva on vital pulp exposures and in 1953 formulated the following technique for his procedure.

Technique

1. Make a diagnosis concerning the vitality of the pulp in question. This is most important, because all subjective symptoms must be favorable to all clinical tests. Take an apical x-ray to be sure that there is no bone involvement. Ask the patient

¹ Yancey, P. H.: Personal communication.

about symptoms of the tooth; it can usually be determined whether the pulp is vital and healthy by talking with the patient. The crown of the tooth must be reparable, and the patient cooperative.

2. Inject local anesthetic and obtain profound anesthesia before cutting deeply into the tooth structure.

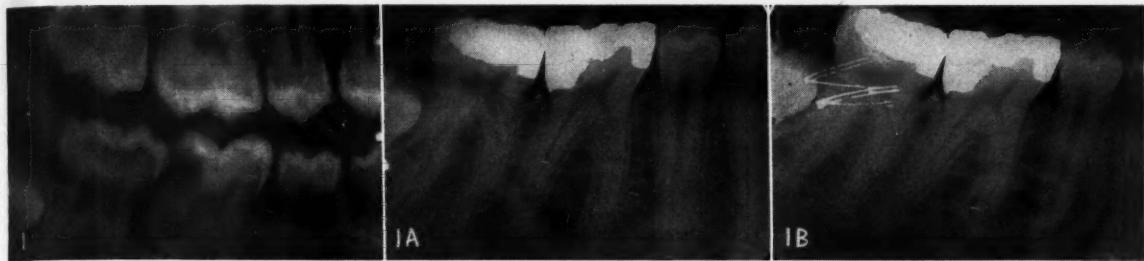
3. Do not use a rubber dam; the rubber dam is contraindicated in vital pulp treatment. The more saliva that can be kept on the exposed pulp the better chance it has for survival. Proceed with water-air spray attachment on the contra-angle and make a cavity preparation as though the pulp were not involved.

4. Remove all caries no matter how large the exposure has to be. Do not expose the pulp any more than necessary, and try not to cut, or mutilate, or touch the pulp. In most cases the pulp will be cut while trying to remove caries, and bleeding will occur.

5. Check the characteristics of the blood: if it is bright red and flowing freely the pulp is healthy. If it is pale pink and mixed with yellowish serum the pulp is not healthy, and root canal therapy or extraction is indicated.

6. Sometimes all caries can be removed without making the pulp bleed. A healthy pulp will look white with a pinkish tint and no serum or fluid will ooze from the pulp chamber. An unhealthy pulp will have a yellowish tint and serum or fluid will issue from the chamber.

7. Place medicinal slaked lime in a sterile dappen dish. Any substance that is used by the operator and introduced into the oral cavity should be sterile; any material already present in the oral cavity is sufficiently "sterile." Never try to sterilize a cavity preparation or pulp exposure. Most



agents strong enough to kill bacteria will also destroy pulp tissue.

8. Have the patient rinse all debris from the mouth with water. Check the hemorrhage with saliva and medicinal slaked lime (a form of calcium hydroxide) applied with a cotton pellet and cotton pliers. Clean out this blood-lime mixture with a saliva and water rinse.

9. After the hemorrhage has been checked with a clean piece of cotton apply clean, clear saliva in the cavity preparation.

10. Dip saliva-wet cotton in the slaked lime powder and place lime on the pulp exposure. (This saliva-slaked lime unites with the pulp to

1. Shows a carious exposure on the distal of the lower right first molar. The patient's age is 15.

1A. Case shown in Figure 1 six months after treatment.

1B. Case one and one-half years later.

oxide and 10 per cent by volume basic aluminum acetate powder with eugenol and fill the preparation completely with this mixture. Carve down excess and check bite with articulating paper. No antibiotics are necessary in this treatment.

Discomfort Rare—Instruct the patient not to use the tooth for chewing, and warn him that slight discomfort may be experienced in the tooth when the anesthetic wears off.

A mild anodyne will counteract it. Discomfort is rarely experienced and most patients find the treatment painless at all times. Dismiss the patient for three or more weeks.

Final Restoration Completed—When the patient returns cut down the zinc oxide base and place final restoration. Often the base will come out when trying to cut it down. When it does, place a small amount of saliva and slaked lime over the old exposure area, and replace with zinc oxide 10 per cent basic aluminum acetate-eugenol base and complete final restoration, in gold, alloy, or silicate. Do not use a self-curing resinous filling material.



2. Shows a carious exposure on the distal root of the lower first molar. The patient's age is 28.

2A. Case six months after treatment with cement restoration in place.

2B. Case two years later.

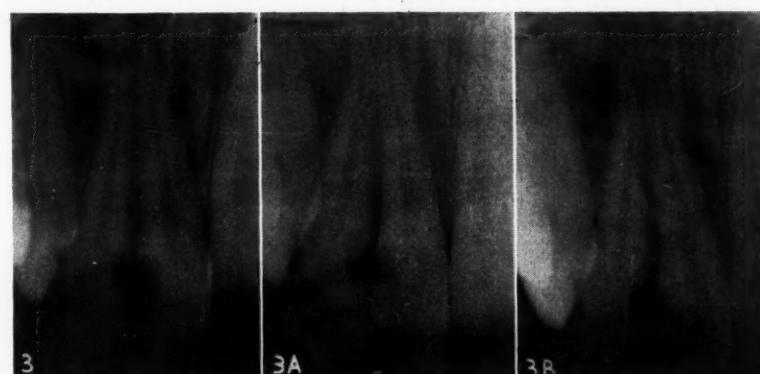
form a tenacious crust at the point of exposure.)

11. Dam out excess saliva from the tooth with cotton rolls.

12. With dry cotton keep applying slaked lime until a good coating is present and all free saliva is absorbed in the powder.

13. With an explorer remove excess lime and clean the enamel walls.

Preparation Restored—Mix zinc



3. Shows a carious exposure on the distal of the upper left central and on the mesial of the upper left lateral also. The patient's age is 18.

3A. Case one year after treatment.

3B. Case two and one-half years later.



Summary of Technique

1. Make a diagnosis using x-rays.
2. Give a local anesthetic.
3. Use no rubber dam, remove all caries.
4. Have the patient rinse out with water; check hemorrhage with slaked lime; place saliva-slaked lime over exposure; place zinc oxide 10 per cent basic aluminum acetate-eugenol. Dismiss the patient with proper instructions.
5. After three or more weeks place the final restoration.

To date this treatment has been completed on several hundred carious exposed vital pulps of all ages and descriptions and the failures have been negligible. Many dentists are using this technique with good results. The treatment is done routinely by the author and although failure is not expected the patient is always informed of the nature of the technique and warned that a pulp failure is possible.

General Technical Considerations

- (1) In many cases the treatment and final restoration were completed in one visit. (2) It took several days for these pulps to return to normal. (3) Alloy restorations caused more reaction than silicates. (4) The pulps responded to temperature changes. (5) Pressure was a factor in the dis-

4. Shows a carious exposure on the mesial of the lower left second deciduous molar. The patient's age is 7.

4A. Case six months after treatment.

4B. Case one year after treatment.

comfort in alloy restorations. Waiting three or more weeks is recommended because reactions are rare, and the possibility of jeopardizing the pulp is much less.

Observations Gained From Study

Studies on pulp behavior have led to the following conclusions:

1. The rubber dam should never be used while preparing a cavity on vital teeth. In particular it should not be used when a pulp exposure is expected. The secret of success in pulp capping is to retain the pulp in the proper environment.
2. The water-air spray attachment should be used on the contra-angle.

5. Shows a carious exposure on the occlusal of the lower right first molar. The patient's age is 9. This case, and many similar cases successfully treated, indicate that pulpotomy operations are unnecessary.

5A. The case, shown in Figure 5, one year after treatment.

5B. Three years after treatment. A study of the x-ray film in this case will prove that the pulp is still vital because the root has completed its development.

At all times during cavity preparation and removal of carious debris from the exposed pulp a constant stream of water should be played on the tooth and grinding instrument. This constant washing away of debris is all the cavity sterilization that is necessary. No antibiotics are needed postoperatively.

3. In cases of carious exposures the carious process of the hard structure of the tooth does not always extend into the vital pulp tissue enough to cause death to the pulp. It is extremely difficult, in fact, to infect the pulp.

4. All pulps of any age, deciduous or permanent, can be treated the same. Pulps in teeth with fully formed apices respond as well as those with open apices.

5. The patient's saliva is not infectious when dealing with pulps and other oral structures; rather it seems to act as a bactericidal or bacteriostatic agent.

6. Except in some tooth fracture cases, all pulpotomy operations are unnecessary. Pulpotomy operations leave the coronal portion of the tooth nonvital and subject to fracture.

7. Anterior teeth with pulp exposures, carious or otherwise, can be capped and finished successfully with silicate in one short operation without unfavorable reactions from the pulp afterwards. The saliva-slaked lime base is used under all silicate restora-



tions. This method ensures pulp protection. A waiting period of three or more weeks is recommended.

8. The pulp is a fairly tough tissue. It has been possible to hold it aside with a small metal instrument, while caries was removed from the wall of the pulp chamber.

9. Many teeth with a history of odontalgia respond well to the treat-

ment described here. A thorough consideration of pulp health and causes of odontalgia must be undertaken. In these cases a partial pulpotomy in the area of the exposure will establish free bleeding of the pulp.

10. It is unwise to mark teeth for extraction merely from a visual or x-ray examination, except in the case of obvious periodontal involvement.

Conclusion

It is the author's belief that with proper diagnosis, and the use of this technique, many more teeth can be saved. It is hoped that this discussion will stimulate increased study of pulp behavior.

2000 Grant Street

Severe Facial Trauma Demands

Sure Airway

MAINTENANCE of an adequate airway is the most important principle in treatment of patients with severe facial injuries. In a paper, prepared in collaboration with Doctor Richard Walden of Meadowbrook Hospital, and read before a surgical section meeting at the New

York Academy of Medicine, Doctor Bertram Bromberg of Bellevue and University Hospitals, New York, reviewed the results of treatment of 1,305 patients with maxillofacial bone injuries. He pointed out that in severe fractures the patient probably will require a tra-

cheostomy. In the treatment of midface fractures Doctor Bromberg stated that he routinely uses internal wiring connecting the broken fragment to the nearest solid bone.

Adapted from *Scope* 2:4 (Feb. 13) 1957.

The Conclusion of a Ten-Year Study of

Water Fluoridation

D. B. AST, D.D.S., M.P.H., and E. R. SCHLESINGER, M.D., M.P.H.

WITH REGARD to acute fluoride poisoning there is at least a 2,500-fold factor of safety in water fluoridation. The mechanics of water fluoridation are such that it is impossible to produce acute fluoride poisoning either by accident or intent. Crippling fluorosis, characterized by a stiffening in the back due to calcification of the broad ligaments of the back, occurs with a daily intake of 20 to 80 milligrams of fluoride or more for 10 to 20 years. Since five gallons of fluoridated water at 1 ppm F contain 20 milligrams, it is obvious that crippling fluorosis can never be pro-

duced by drinking fluoridated water. The earliest evidence of osteosclerosis, a hypercalcification detectable by roentgen examination, does not occur with an intake of fluoride below eight to 10 times the level of fluoridated water . . . The evidence with respect to heart disease, kidney disease, cancer, and possible influence of fluoride on the thyroid . . . indicates no influence of fluoride intake on any of these at the levels found in any water supplies in the United States. Studies on experimental animals with the use of radioactive fluoride show that the thyroid gland does

not concentrate fluoride as it does iodide. The presence of renal impairment in experimental animals and in human beings with long-standing kidney disease appears not to affect excretion of fluoride by the kidneys. The comprehensive analysis of the Newburgh-Kingston Caries-Fluorine Study after 10 years of experience, added to the wealth of evidence previously reported, demonstrates conclusively two important facts—fluoridation is effective in reducing dental caries and it is a safe public health practice.

From *Journal of the American Medical Association* 161:591 (June 16) 1956.

TRAUMATIC COMMUNICATION

Between Mouth and Nose:

A Case Report

LOUIS J. PEREIRA, JR., D.D.S., Three Rivers, Massachusetts

DIGEST

This case history reports the treatment of an injury from an automobile accident. The unusual feature of the case was that despite the existence of an extensive laceration on the lateral side of the floor of the nose with a deep tear about 1 centimeter long, there was no indication of this condition on the outside of the face and none of the profuse hemorrhage that would be expected in such a vascular region.

History

The patient in this case, a well-developed white man, 36 years of age, had been the driver of one of two automobiles involved in a head-on collision. When first seen, in the hospital, the day after the accident, the patient's chief complaints, exclusive of back and chest pains, were pain in the right infraorbital region and the fact that when he took fluids in his mouth they were expelled through the right side of the nose.

Results of Examination

It was noted that there was evidence of considerable edema and ecchymosis in the right infraorbital region, extending across the nose and involving the left intraorbital region and upper lip to a lesser degree. There was no further evidence of injury to the outside of the face with the exception of a small abrasion on the upper lip.

Intraoral Examination — 1. There was no clinical evidence of fractures of the maxilla or mandible.

2. When the upper lip was lifted, a laceration was noted in the mucobuccal fold starting at the apex of the upper left cuspid and extending along the fold around to the area in the fold immediately mesial to the upper right first molar.

3. On the left side, up to the mid-

line, the laceration was clean cut and appeared to be about 0.5 centimeters deep.

4. On the right side the laceration penetrated the tissues to an undetermined depth.

5. From the midline to the upper right cuspid, the labial portion of the maxilla down to the periosteum, was completely denuded from the gingival margin as high up as could be seen.

Radiographic Examination — This was negative for fractures of the facial bones.

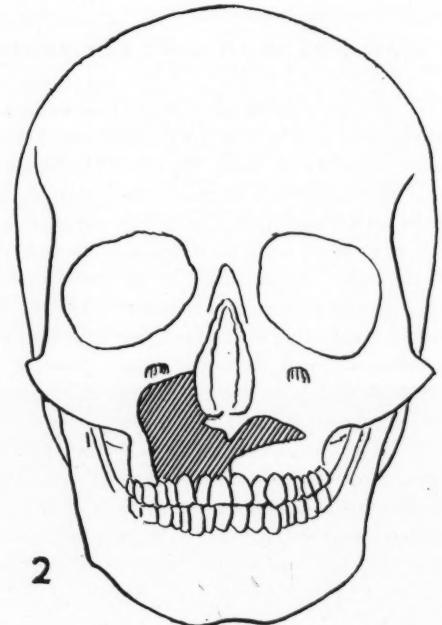
Diagnosis

Consultation was held with a member of the ear, eye, nose, and throat service of the hospital and it was determined that the laceration extended in to the lateral side of the floor of the nose on the right side and that a tear about 1 centimeter long was present.



1. Area involved intraorally.

2. Involvement in relation to skull.



Treatment

The right side of the nose was packed and warm saline mouthwashes every three hours and ice packs 20 minutes on and one hour off were prescribed.

In three days the edema had almost completely disappeared, the nasal packing was removed, and the patient was admitted for plastic closure of the oral laceration.

Surgical Measure—1. Under local anesthesia the wound was gently irrigated with saline solution and carefully probed for foreign bodies.

2. No foreign bodies were observed but it was found that the tissue missing from the labial of the maxilla was pushed up toward the infraorbital canal and was still connected on

the lip side with the blood supply.

3. The flap was returned to position after the area was freshened and ten interrupted 000 Dermalon sutures were inserted to close the laceration. No deep sutures were placed and the nasal communication was not sutured.

Postoperative Measures — Saline mouthwash and ice packs were continued for 48 hours. Three days later five of the sutures were removed and the remainder were removed two days later when the patient was discharged. Healing was uneventful.

Antibiotics Administered — The patient was retained on antibiotic therapy from admission until discharge. Temperature remained within normal limits throughout the period of hospitalization.

Comment

The noteworthy aspect of this case was that an extensive laceration of this type which involved the cupid fossa up to the infraorbital canal, and into the lateral side of the floor of the nose, could occur with no indication of laceration on the outside of the face and without the profuse hemorrhage that normally could be expected in such a vascular region.

85 Main Street

Acknowledgements: Appreciation is expressed to Benjamin Schneider, M.D., attending physician, Monson, Massachusetts, and Frank K. Duffy, A.B., M.D., F.A.C.S., eye, ear, nose, and throat consultant Palmer, Massachusetts for their cooperation.

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Maternal Stress as Cause of Cleft Palate

A Study Undertaken

IN 228 women who had children with cleft palate or harelip about 68 per cent reported severe emotional disturbance during the first trimester, and 23 per cent reported disease or trauma during the eighth to tenth weeks. Only 15 per cent of the women reported similar stresses during other pregnancies with normal offspring.

Incidence in Firstborn Children — In 40 per cent of instances, firstborn children were affected. Anxiety frequently associated with first pregnancies, intensified by other stresses, may be responsible for

high incidence of deformity in this group.

Genetic Factors — Other members of the family also had cleft palate in about 25 per cent of instances. However, only 2 per cent of the women had more than one child with the defect. In four instances, cleft palate was observed in one of a pair of twins. Thus, genetic factors, while possibly predisposing to cleft palate, do not appear to be solely responsible for development of the anomaly.

Hormonal Activity — Probably, stress causes congenital abnormalities by increasing adrenocortical activity, thus producing an over-

abundance of circulating hydrocortisone. Excessive hormonal activity apparently inhibits fibroblastic proliferation and causes histochemical changes in collagen fibers.

Cleft Palate from Cortisone Injections — In mice, cortisone injections during the period of fusion of the embryonic maxillae produce cleft palate in about 87 per cent of the offspring. Feeding of a diet containing an excess of anticatabolic vitamins reduces incidence of cleft palate in offspring of cortisone-treated animals.

Adapted from *Modern Medicine*
24:135 (December 1) 1956.

MULTIPLE INLAYS,

CROWNS, and BRIDGES-

Part Three

COYLE B. THOMAS, D.D.S., Lebanon, Missouri

D I G E S T

This article describes a method for improvement in techniques in the use of gold by the average general practitioner. So much research has been done on wax expansion techniques and vacuum investing that it is impossible here to give credit to all who have contributed. The hygroscopic investment procedure used by the author, however, is based upon the technique outlined by Scheu and Hollenback. By adapting these techniques to the equipment now present in most dental offices the general practitioner can improve his results in the use of gold. This is the final article in a series of three.

Hygroscopic Expansion: Vacuum Investing

The following equipment is required for this technique:

1. A furnace equipped with a pyrometer.
2. Scales for weighing the powder portion of the investment.
3. Measuring cup and medicine dropper for measuring the water portion of the investment.
4. An inexpensive hot plate.
5. A thermometer for reading temperature of the water bath. A dairy thermometer is satisfactory.
6. A small pan for heating the water bath.
7. A portable aspirator.
8. A chuck for the lathe that will receive a specially prepared spindle.

9. A vibrator or offset spool on the reverse end of the lathe.

10. A vacuum investing unit such as the Barr unit.

11. An alarm clock.

12. A specially prepared mixing spindle.

Laboratory Procedure

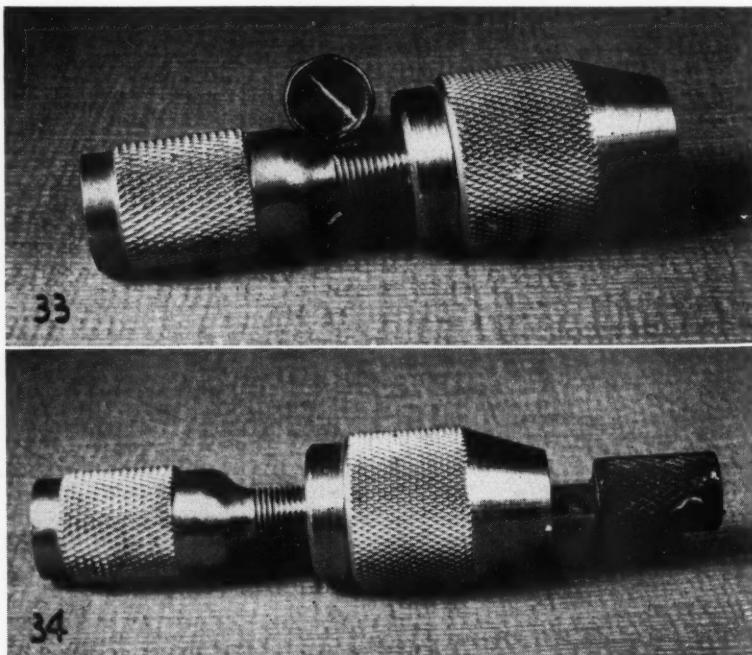
1. Place a pan of water with a thermometer in it on a hot plate and turn on the current. The water must be deep enough to cover a casting ring.

2. Weigh 50 grams of investment

and measure 15 cubic centimeters of water. Use a medicine dropper to add water to the mark on the measuring cup.

3. Line a casting ring with asbestos and moisten in water. In the meantime check the temperature of the water bath. When the temperature reaches 100 degrees Fahrenheit, turn off the heat but leave the pan of water on the hot plate.

4. Pour the powder in the plastic mixing bowl, add the water to it, place the center frame with the casting ring and pattern in place on the mixing bowl. Add the metal bowl which has the rubber hose connected to the aspirator tubing and turn on



33. End view of the spindle and lathe chuck which will receive it.

34. Chuck with spindle inserted.

the vacuum on the aspirator.

5. When the indicator shows that maximum vacuum (approximately 22 pounds) has been reached, tip the lathe at an angle and support on some object about the size of a cake of tripoli polishing compound.

6. Place the mixing bowl on the spindle in the chuck and turn on the lathe. Mix for a short time (one moment or less), set the lathe down flat and place the other end (metal bowl) of the mixing unit on the vibrator and vibrate the mix from the mixing bowl into the inlay ring contained in the water bath.

7. Remove from the vibrator, turn off the vacuum, disassemble the unit, and place the inlay ring in the water bath.

8. Turn on the electric burn-out oven to high heat, set the alarm clock for 30 minutes.

9. When the alarm sounds, adjust the oven to maintain a temperature of between 800 degrees and 950 degrees.

10. Remove the inlay ring from the water bath and place in the oven.

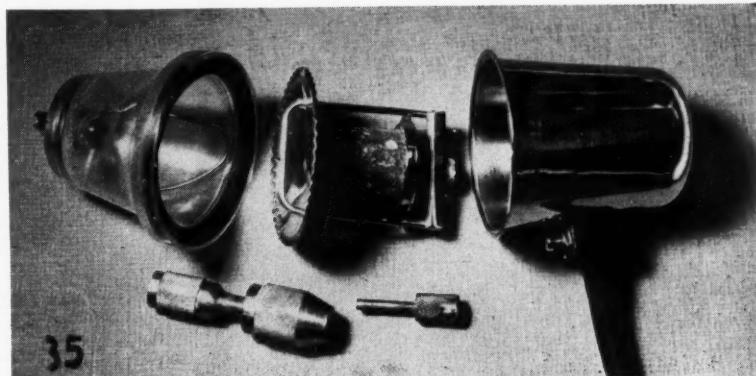
11. Set the alarm to sound in 45 minutes for small and medium sized castings and correspondingly longer for larger castings.

12. When the alarm sounds, remove the inlay ring from the oven and cast.

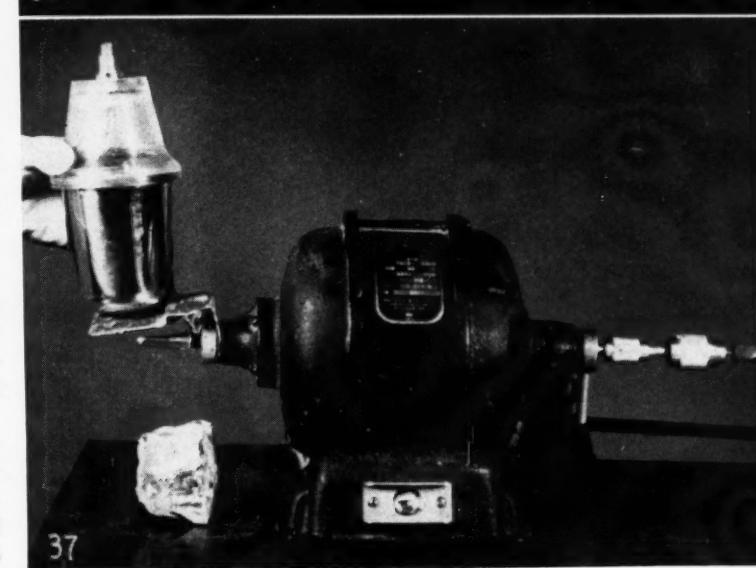
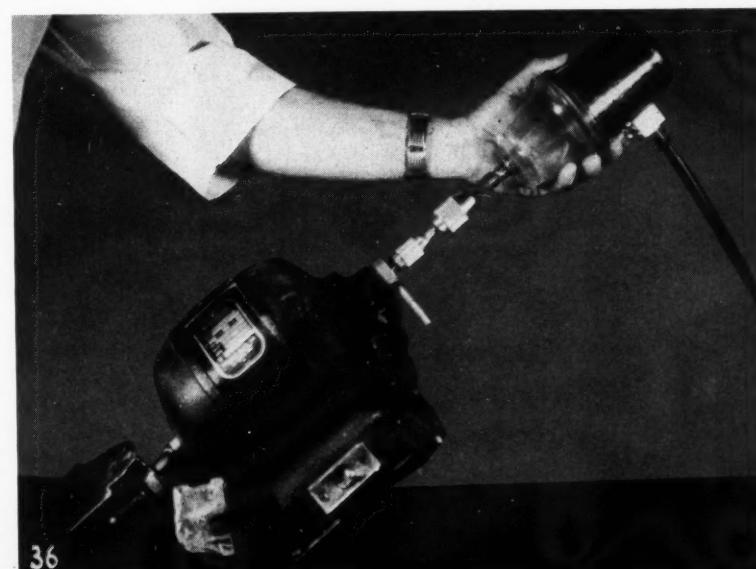
The casting made by this method will be extremely smooth and have few bubbles. In some cases a high vacuum may be desired and it may be desirable to secure the entire casting outfit which includes a vacuum pump and a mixer and vibrator combined. The author made his own mixing spindle. Any machine shop can make one to go in the lathe chuck.

Whether the entire vacuum outfit is purchased or whether the lathe and aspirator are pressed into service as suggested, the resulting castings will be satisfactory.

The size of the castings may be controlled by varying the water to powder ratio. For example, 14 cubic centimeters or 16 cubic centimeters of water instead of the suggested 15 cubic centimeters.



35. Disassembled vacuum unit, chuck, and spindle.



36. Method of mixing investment on lathe.

37. Pouring mix in a vacuum.

A Perfect COMPOUND INLAY

Impression Technique

IRVING A. ELLMAN, D.D.S., Brooklyn, New York

DIGEST

No other dental procedure affords as much satisfaction as the fitting of a perfect gold inlay. During the past few years, however, the trend has been to the full coverage of crowns. Where the purpose of the restoration is not only the replacement of carious tooth structure, but also the correction of the shape or position of the tooth, the choice of the full crown is justified. But for the many mouths with normal occlusion, where the problem is only that of replacing tooth structure lost from caries, no better restoration exists than the gold inlay.

The inlay impression technique, described here, has produced in hundreds of cases perfect gold inlays, consistently, and without difficulty. Before the step-by-step details of the technique are presented, a review of the reasoning that led to the development of each step is outlined. If the operator understands the reason for each step in the technique, he will be able to resist the temptation to eliminate, or change any step because it may seem simple and unimportant. When micrometer accuracy is desired, every detail is important.

Accuracy Required

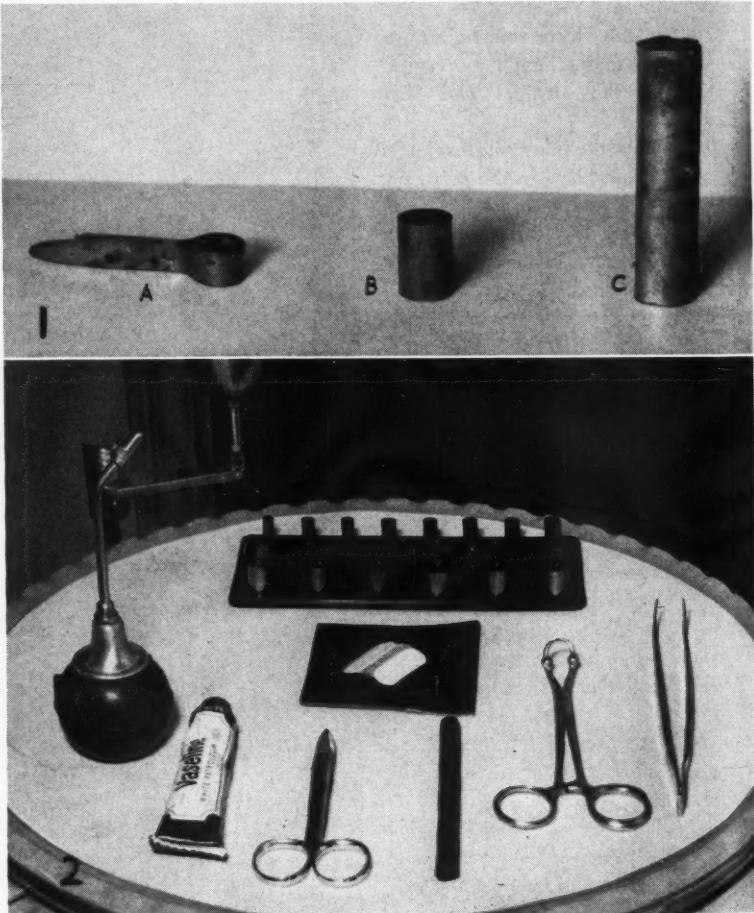
Any inlay technique must be exact in every detail if the results are to be accurate. That this goal is a difficult one can be realized from the fact that the margins of the average compound gold inlay if placed on a straight line, would be approximately three inches

long, and that the inlay must fit every part of this line with micrometer accuracy. Proof that results in the past have not been uniform can be found in the change from one impression material to another in the search for improvement. Despite the introduction of inlay wax, elastic ma-

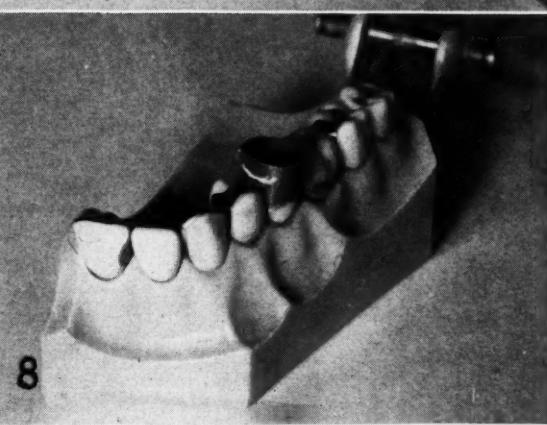
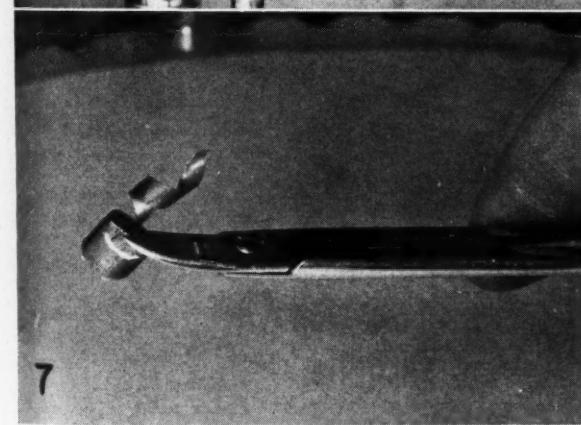
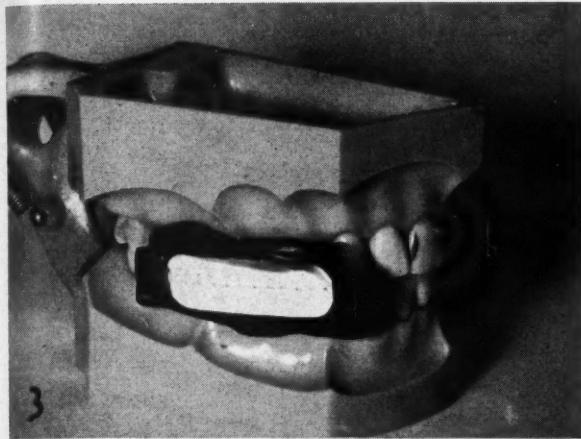
terials, rubber base materials, hydrocolloids, and alginates, more impressions are taken today with modeling compound than with all other materials combined.

Why Modeling Compound Was Selected for the Impression Material

The fact that after many years modeling compound is still the most



1. Matrix bands: (A) $\frac{1}{4}$ inch for wax impression, (B) $\frac{1}{2}$ inch copper band, (C) $1\frac{1}{2}$ inch copper band.
2. Instruments: Copper bands, water syringe, Vaseline®, crown shears, wax and bite trays, compound stick, towel clip, and college pliers.



3. Take the wax bite first as this cleans out the debris in the cavity preparation.

4. Examine the wax bite and check cavity preparation.

5. Select a suitable size copper band and anneal it. It should fit the tooth snugly, but should not be so tight that it has to be stretched and embossed by the sharp margins of the prepared tooth. A small amount of compound is needed between the copper and the tooth to register the impression.

6. Fit the band to the tooth and mark the gingival outline

with an instrument to avoid undercuts. Also mark the mesial of the band at the height of the marginal ridge of the tooth anterior to it. This serves as a guide for proper positioning of the impression.

7. Trim the band for gingival fit and also reduce the length of the band so that it is approximately 2 millimeters longer than the height of the cusps using the mesial mark as a guide.

8. Check the trimmed copper band on the tooth.



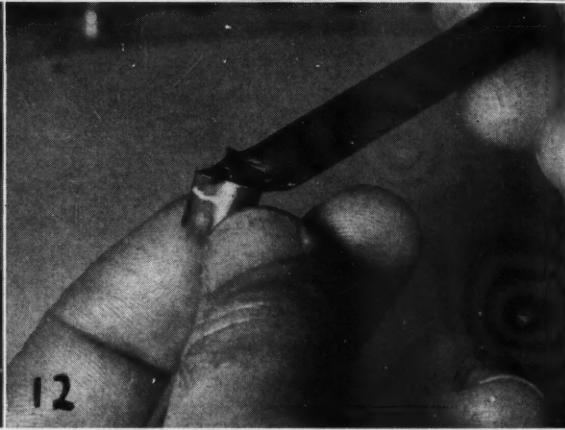
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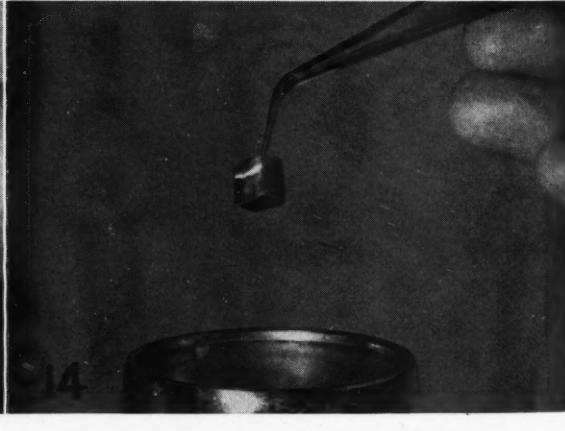
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14

9. Dry the inside of the band so that the compound will adhere to it, otherwise thin pieces will break off at the gingival, marring the impression.

10. Coat the index and forefingers of both hands with Vaseline® to prevent the compound from sticking to them. Drill a hole the size of a Number 2 bur through the cap of a tube of Vaseline for easier dispensing.

11. Soften the compound stick over the flame.

12. Fill the band with compound.

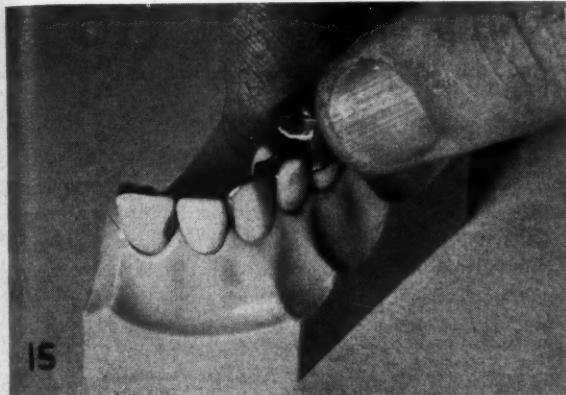
13. Coat both surfaces of the compound and the outside of the copper band with a thin film of Vaseline. This prevents the compound from sticking to the finger and the tooth and also makes it easier to remove any excess compound from the outside of the copper band.

14. The gingival compound is carried quickly through the flame so that a smooth glossy surface is obtained.

popular impression material indicates that there are more advantages than the disadvantages in its use. The suc-

cessful inlays which have been made with modeling compound prove that it is potentially an excellent impres-

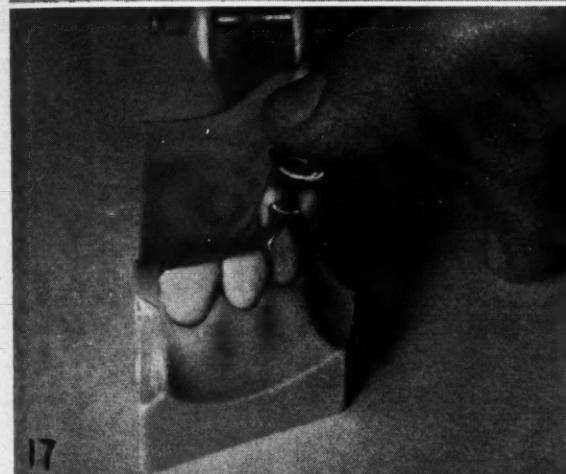
sion material. The failures suggest that the fault must be with the method of handling the material.



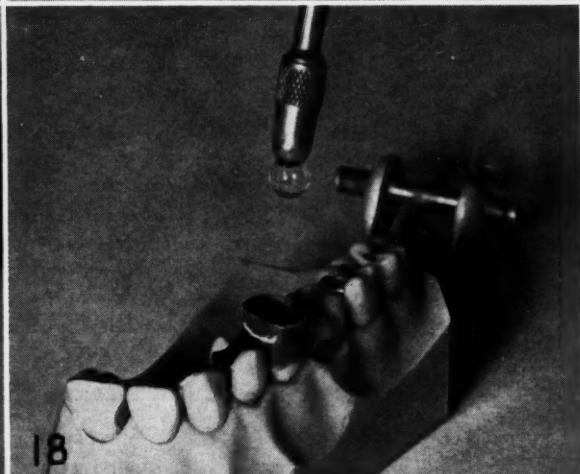
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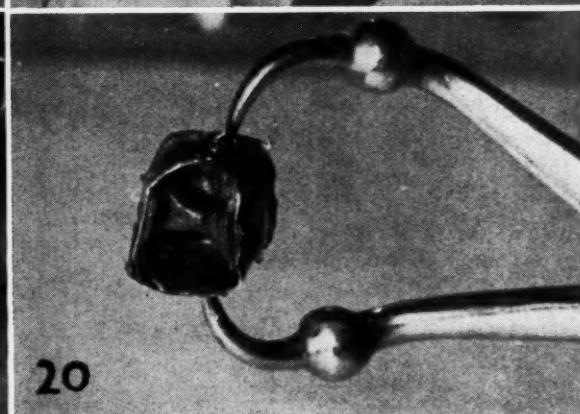
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19



20

15. Immediately after flaming, place the band and the compound on the tooth.

16. During the initial placing of the band, cover only one-half of the open end of the band so that the excess compound can escape.

17. When the mark on the mesial side of the band comes level with the adjacent marginal ridge, completely close

the open end of the band and firmly press to position.

18. Chill the band with cold water until the compound is completely hardened.

19. Remove the copper band impression with the towel clip, using an orange wood stick as a fulcrum.

20. The final compound inlay impression is shown.

Why the Copper Band Should Be Shortened

The primary reason for better results with inlay wax impressions is

that the matrix band used is only $\frac{1}{4}$ inch high (Fig. 1A), and as a result the wax is extremely thin occlusally, and can be readily adapted

to the tooth. With modeling compound, the band is $\frac{1}{2}$ inch high (Fig. 1B), giving an excess $\frac{1}{4}$ inch of impression material occlusally.

Force Decreased—Since modeling compound is viscous and rubbery, the force applied by the finger decreases as it is transmitted through the compound until at the surface of the tooth it is insufficient to register sharp details which is the cause of most of the difficulties. The problem can be exaggerated by using a band 1½ inches high. Since the tooth is only ¼ inch high, 1¼ inch of excess viscous compound would remain to abate the force applied by the finger, resulting in virtually no impression at all.

Thinner Mass More Easily Manipulated—Another advantage of a shorter band is that it is easier to soften and then harden the resulting thinner mass of compound. It is evident that the shorter the copper band the more accurate the impression.

Petroleum Jelly is Used

Because modeling compound is a stickier material than inlay wax, sal-

iva alone is not a suitable lubricant for it. The use of Vaseline® in addition to saliva prevents the compound from sticking to the tooth, and facilitates removal of the impression. Remember that wax is used to coat ballroom floors while modeling compound is derived from sealing wax. For convenience a bur hole may be drilled in the cap of a tube of Vaseline® so that a small amount can be conveniently dispensed without removing the cap.

A Towel Clip is Used To Remove Impression

The most perfect impression can be ruined by careless removal. Only by using a towel clip can the impression be removed in a direction parallel to the long axis of the tooth without any buccolingual or mesiodistal distortion. Figure 19 shows that when downward force is applied on the handle of the towel clip, the force is directly opposite at the tooth. The

pointed ends of the towel clip act as axles, preventing any mesiodistal distortion of the impression.

Conclusion

Do not underrate the value of the technique because of its simplicity. In actual use on hundreds of practical cases, this procedure has consistently produced perfectly fitting inlays. Previous poor results were attributed to poor dies, poor investing, or poor casting, but the use of this impression technique has shown that most of the errors originate with a poor impression. The advantages of this technique are (1) its simplicity, (2) no special materials are required, (3) there is no special die problem, (4) there is no problem of removing gingival tissue, and (5) the procedure produces the most perfect inlays, crowns, and veneers.

701 Brighton Beach Avenue

CLINICAL AND LABORATORY SUGGESTIONS

(See pages 222 and 223)

Form to be Used by Contributors
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Explanation of Procedure:

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The EDITOR'S Page

IN THIS day when intravenous thrombosis or embolism is a common clinical condition in cases of diseases of the coronary and cerebral circulation it is routine practice to use one of the anticoagulants, such as dicumarol or heparin. These drugs decrease the coagulability of the blood and have been valuable aids in the prevention of subsequent occlusive intravascular clotting. When persons who are under such treatment are exposed to surgical or accidental trauma the danger from hemorrhage is significantly increased. Tooth extraction presents such a potential hazard.

A dental-medical group in the New York Veterans Administration Hospital has reported two cases of persistent and serious hemorrhage following tooth removal in persons under anticoagulant therapy.¹ In the same issue of *The New England Journal of Medicine* appears an editorial of warning on the same subject.²

The Veterans Administration authors said:

"Dental operations, like other operations on certain bones, may create a special problem in hemostasis. More than 5000 extractions, single or multiple, and other oral surgical procedures (including alveolectomies, apicoectomies, gingivectomies and removal of tissue for biopsy) have been done on 3500 patients in this hospital without episodes of massive or prolonged bleeding. None of these operations, however, was done on patients receiving anticoagulant therapy. The potential seriousness of dental hemorrhage is emphasized by the little-appreciated fact that blood loss during some oral surgical procedures is comparable with that incurred in major surgical operations. Our experience, although limited, suggests that anticoagulant drugs be withheld before dental operations. Recurrent thromboembolism occurred most often, in the reported cases, weeks or months after cessation of treatment with dicumarol. Prompt readministration of this medication when the danger of

excessive hemorrhage has subsided assures minimal interruption of anticoagulation."

The editorial previously mentioned stated:

"The factors that initiate clinical bleeding and thrombosis are capricious and often, in the individual case, unknown. The use of such drugs, [the anticoagulants] cannot be expected, therefore, to be devoid of hemorrhagic complications or of therapeutic failures. These considerations should not contraindicate their judicious use.

"Familiarity, however, breeds contempt and in this area has engendered a therapeutic boldness. The recent introduction of preparations of the true vitamin K in fat emulsion as a more effective antidote to dicumarol-induced hypoprothrombinemia has tended to encourage this frame of mind. . . .

"The present article is a useful reminder of the fact that dicumarol bleeding can easily be initiated by trauma and that such hemorrhages are not always harmless. One cannot but endorse the authors' conclusions that the drugs should be discontinued during elective surgery."

Once again the importance of careful history-taking in the case of any candidate for extraction is emphasized. Dentists have generally been too casual in their approach to oral surgical procedures. Any patient who is ambulatory has been considered to be a good surgical risk. Fortunately, in most cases such impromptu clinical evaluation has been without serious complications or disaster.

Every adult patient should be asked to relate his previous experiences with anesthesia, to recall any reactions that he has had from the antibiotics, to recount any recent exposures to radiation therapy, and to describe *any kind* of medical treatment that he is presently receiving. A moment spent in advance of any kind of oral surgical operation in such an informal and friendly inquiry may prevent serious reactions and sequelae. Rather than being disturbed by such solicitude, the patient will appreciate the thoroughness and interest of such a diagnostician.

¹Ziffer, Albert M.; Scopp, Irwin W.; Beck, Jan; Baum, John; and Berger, A. R.: Profound Bleeding After Dental Extractions During Dicumarol Therapy, *New England J. Med.* **256**:353 (Feb. 21) 1957.

²Editorial, *New England J. Med.* **256**:367 (Feb. 21) 1957.

PARTSCH OPERATION

for a Globulomaxillary Cyst:

A Case Report

WILLIAM E. DENNARD, B.S., D.D.S., Albuquerque, New Mexico

DIGEST

This case history demonstrates a method for saving teeth which are apparently involved in a globulomaxillary cyst. Step-by-step directions for completing the surgical procedure employed are given.

Description of Technique

The Partsch technique for shrinking large radicular or dentigerous cysts is useful as an aid to preserve the integrity and vitality of one or more teeth which might otherwise have to be removed because of apparent root involvement. Thoma¹ states, "A permanent opening is made into the cyst so that the pressure is relieved and the natural repair processes are allowed to restore the original outline and structures of the involved bone." The factor of prime impor-

tance is the shrinking of the odontogenic epithelial sac away from the roots of sound teeth toward the permanent opening into the cyst. The cyst is enucleated when it is sufficiently reduced in size to be safely removed without injury to the roots of the sound teeth. Healthy bone as a rule will be filled in behind the cyst as it decreases in size.

History

The patient was a 13-year-old girl in apparent good health. Removal was considered of a large maxillary cyst and the involved central incisor, lateral incisor, and cuspid. The patient complained only of tenderness in the cuspid fossa area.

Results of Examination

1. Edema was present in the left

1. Globulomaxillary cyst.
2. Globulomaxillary cyst.
3. After Partsch operation.

maxillary cuspid fossa with some tenderness around the ala of the nose.

2. The mucobuccal fold at the apex of the left cuspid and lateral incisor was edematous and hard.

3. The palate immediately above the apex of the lateral incisor was also sore to percussion and edematous.

4. Figures 1 and 2 show the cyst to involve primarily the lateral incisor and possibly the apex of the central incisor and cuspid.

5. The teeth all responded vital to a degree; the lateral incisor responding least.

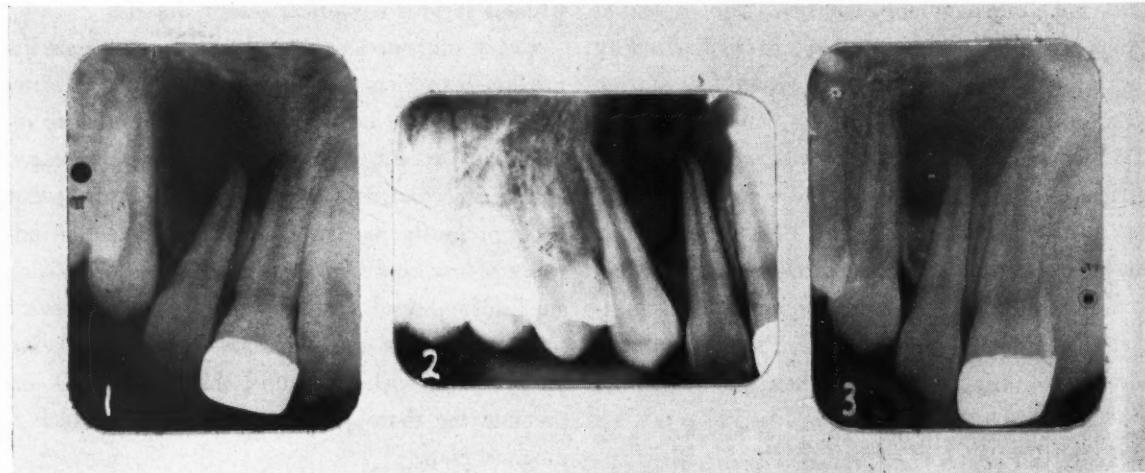
6. The presence of a large gold incisal cap on the left central incisor was revealed by x-ray.

7. Using a 22-gauge needle and a Luer-lock syringe, 2 cubic centimeters of straw-colored fluid were aspirated from the cyst.

Procedure

The patient was premedicated with Nembutal®, 1½ grains, and Demerol® 50 milligrams. The operation was performed under local anesthesia using 2 per cent procaine.

The following steps were taken:



1. A half moon incision approximately 2.5 centimeters, was made well up into the mucobuccal fold, as high as could be made through the labial plate of bone.

2. The lining of the cyst was carefully detached and perforated.

3. The perforated border of the cyst was sutured to the labial epithelium. A large amount of straw-colored fluid was aspirated from the area.

4. The cavity was packed with Vaseline® gauze.

5. The patient was given an injection of penicillin, 300,000 units.

Postsurgical Treatment—On subsequent visits, every other day for 2 weeks, the gauze dressings were changed and the cavity irrigated with a weak solution of hydrogen peroxide. When the dressings were discontinued, the patient was instructed to wash the cavity daily with this same solution by means of an ear syringe. The patient was seen weekly from that time.

Procedure Painless—No temperature change from normal was ever noted. Figures 3, 4, and 5 show a series of x-rays taken postoperatively, over a period of 8 months showing the gradual shrinkage of the cyst. The procedure was painless to the patient. The opening had to be maintained by frequent cauterization with a potassium hydroxide paste.

Apicoectomy Performed — Eight months postoperatively the referring dentist, after determining that the lateral incisor was nonvital, proceeded with root canal treatment on this tooth and the author subsequently removed all the cyst in the accepted manner of a conventional apicoectomy. The cyst was still found to be attached to the palatal tissues and no bone had regenerated over the palatal area. The result is shown in



4. Postoperative view.

5. Postoperative view.

6. After root canal therapy.

7. Final x-ray of case.

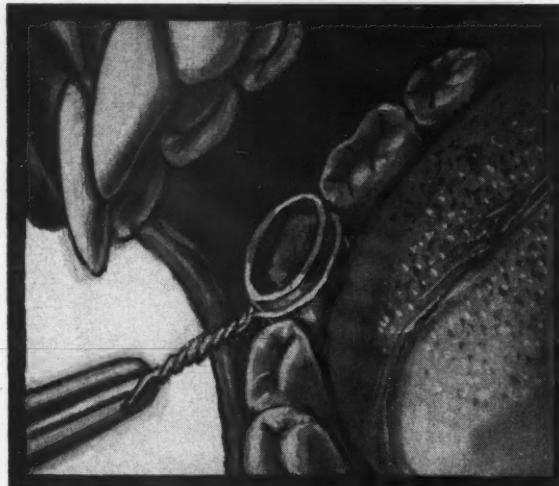
Figure 6. Figure 7 is an x-ray made two years after the patient was first seen.

Conclusion

Since the central incisor and cuspid teeth are now vital and sound, extraction of these teeth and surgical removal of the cyst was proved to be unwarranted. The only drawback to

this procedure is the length of time involved. The usual method of maintaining the opening, by means of an acrylic or metal plug, was not applicable in this case because of the constant irritation to the mucobuccal fold which would have resulted from the use of such an appliance.

720 Grand Avenue, N.E.



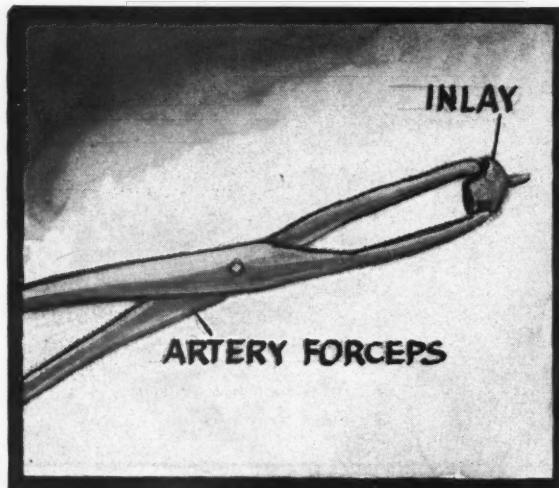
1

Clinical and Laboratory

Splinting with Wire

J. W. Seldenberg, D.D.S., Cedarhurst, New York

1. When twisting wire do not grasp the wire with the pliers close to the loop. Place the pliers at the ends of the wire and twist. This will prevent breakage.

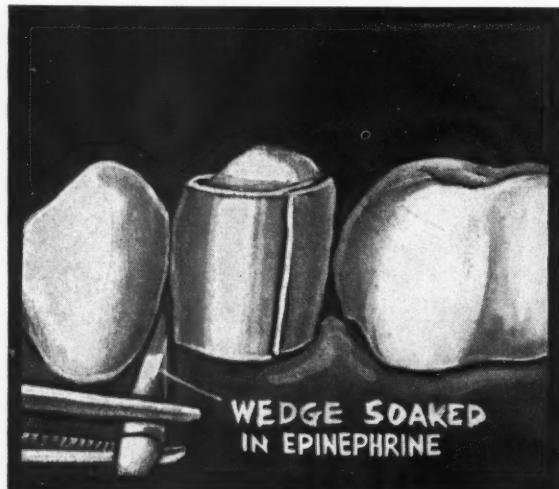


2

Finishing Small Inlays

T. J. Cooke, Winnipeg, Canada

2. Grasp the inlay with an artery forcep when removing the sprue or polishing the inlay.



3

Preventing Gingival Bleeding

L. A. Grilli, Yonkers, New York

3. To prevent interproximal subgingival bleeding, dip the point of a wedge into a solution of epinephrine before the wedge is inserted.

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For every practical clinical or laboratory suggestion that is usable, DENTAL DIGEST will pay \$10.00 on publication.

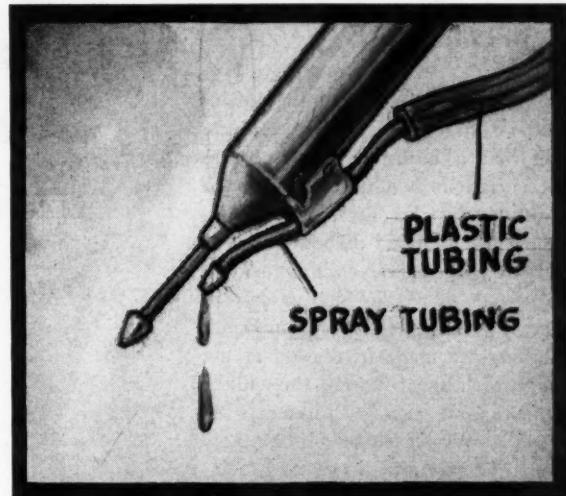
You do not have to write an article. Furnish us with rough drawings or sketches, from which we will make suitable illustrations; write a brief description of the

SUGGESTIONS . . .

Protection of Water Spray Device

Manuel I. Weisman, D.D.S., Augusta, Georgia

4. To prevent the tubing in built-in water spray equipment from getting caught in the handpiece pulleys, place a piece of clear plastic tubing over the water spray tubing.

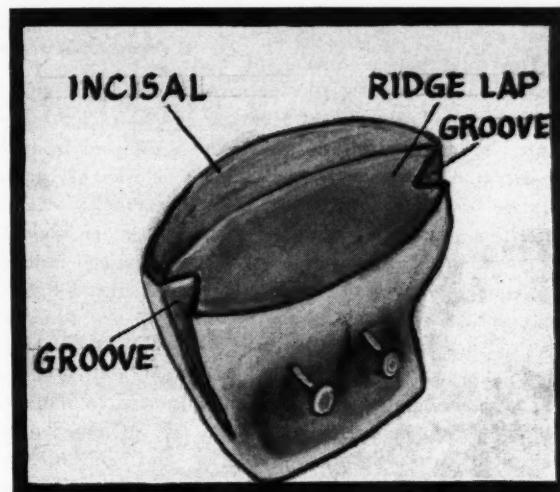


4

To Increase the Retention of Porcelain Denture Teeth

W. C. Norcross, D.D.S., East Walpole, Massachusetts

5. Cut mesial and distal grooves from the gingival toward the incisal edge to increase retention of the tooth in the acrylic base. This is particularly helpful in partial dentures that have one or two teeth on extensions.

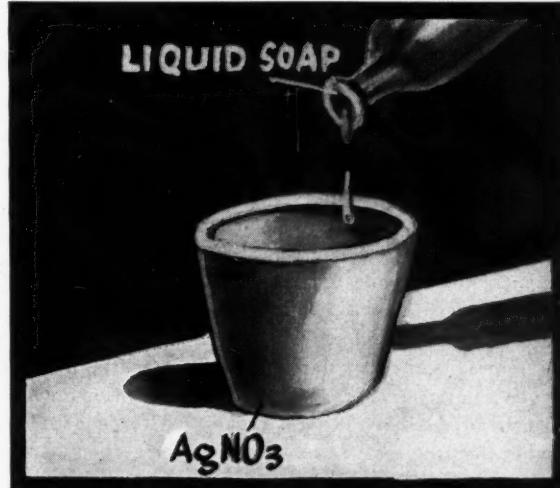


5

Disposal of Silver Nitrate Solution

C. J. Nimmers, D.D.S., Anamosa, Iowa

6. Gently place five or six drops of liquid soap into the dappen dish that holds the silver nitrate solution. A coagulated semi-solid mass is formed that may be easily removed from the dish.



6

technique involved; and jot down the advantages of the technique. This shouldn't take ten minutes of your time. Turn to page 218 for a convenient form to use.

Send your ideas to Clinical and Laboratory Suggestions Editor, DENTAL DIGEST, 708 Church Street, Evans-ton, Illinois.



Nutrition in Diabetic Children

By correlating accurate dosage of insulin with a nutritionally complete diet that is adjusted to compensate for variations in physical activity, a high degree of control can be obtained in childhood diabetes.

Both parents and children should be given thorough instructions in dietary management. Periodic examinations are made to reevaluate the diet which must satisfy the child's appetite and meet requirements of growth and development. Mothers should be carefully shown how to increase or decrease the caloric intake according to the child's needs. Good dietary habits established in childhood usually carry over into adult life.

The total caloric intake of the diabetic child is essentially the same as that of the healthy child. However, large deviations from the mean can be expected because many factors determine the total requirements. To sustain normal growth, intake must be governed by variations in activity and stage of maturation. Although the exact caloric requirements cannot be predicted, the general pattern of the intake can be anticipated.

The intake of adolescent girls must be guided to prevent overweight. Failure to decrease insulin and caloric intake after the prepubertal growth spurt, decreased physical activity, and dietary indiscretions are the main factors causing excessive weight. By evaluating growth and weight gains every three to six months and by use of mixed diets, the caloric intake can be diminished before the child's overweight becomes extreme.

During short periods of activity additional food is more advisable than the degree of insulin intake. The well-regulated diabetic patient has an increased appetite for extra food after exercise just as the normal child has. A good physiologic control of the disease is thus maintained.

The caloric needs of a newly discovered diabetic child are usually higher than those of a well-regulated child. Once good nutritional status is

M E D I C I N E

and the

Biologic Sciences



established and the growth pattern is normal, the requirements can be estimated from the number of mean calories per pound. After periods of incomplete control, a higher protein intake is advisable to rebuild body tissue and replenish body stores. Requirements for water-soluble vitamins may also be greater.

The diabetic child's diet must be liberal in protective foods and adjusted to individual needs. The diet is calculated on the basis of protein and calories. No special attention is given to the ratio of fatty acid to dextrose in individual meals. A wide variety of foods, excluding concentrated sweets, is permitted.

Wilkins, Shirley N.; Ruby, Doris Ott; Kelly, Helen G.; and Jackson, Robert L.: Nutritional Management of Children with Diabetes Mellitus, Diabetes 4:24-31 (July) 1955.



The Human Element In Accidents

Accidents may be caused by defects such as impairment of sensation, particularly of eyes and ears, mental deficiency, and slow reaction time. Also dangerous are such somatic illnesses as arteriosclerosis, cardiac arrhythmia, diabetes and febrile states

likely to impair cerebral circulation. Persons with epilepsy or arteriosclerotic brain changes may be unsafe drivers. Warning should be given to a patient treated with drugs such as Benadryl.®

Most accidents are the result of the emotions of accident-prone persons. Even accidents ascribed to driving while overtired, intoxicated, or under the influence of drugs usually involve psychologic factors.

Accident-prone persons are usually normal in intelligence, coordination, and reaction time but possess distinguishing personality traits. Born to a family with frequent accidents, many divorces, one strict parent, or few children, an accident-prone person in childhood often breaks rules and sleepwalks.

As an adult, the person makes snap decisions, appears casual about feelings, uses stimulants, likes sports and machinery, has an exaggerated interest in personal appearance and health, likes to take a chance, keeps on the move, and is in conflict with authority. In education, the tendency is not to finish a given course; work records are unstable. Such people have difficulty in concentrating and are frustrated and irresponsible. An accident may be precipitated by a specific worry related to an authoritarian figure.

Prophylaxis can sometimes be achieved and at times an accident can even be prevented or predicted. Patients should be warned of dangerous periods and helped to express anger in ways other than by accidents.

Once an accident happens, the subject feels guilt for a time, then tends to swing to the opposite extreme and protest innocence. Psychotherapy may be required in a few cases.

Appel, Kenneth E., and Scheffler, Albert E.: The Human Element in Accidents, Delaware M. J. 27:115-122 (July) 1955.



Cushing's Disease

Cushing's disease is due to overactivity of the adrenal cortex. Diffuse hyperplasia or benign or malignant

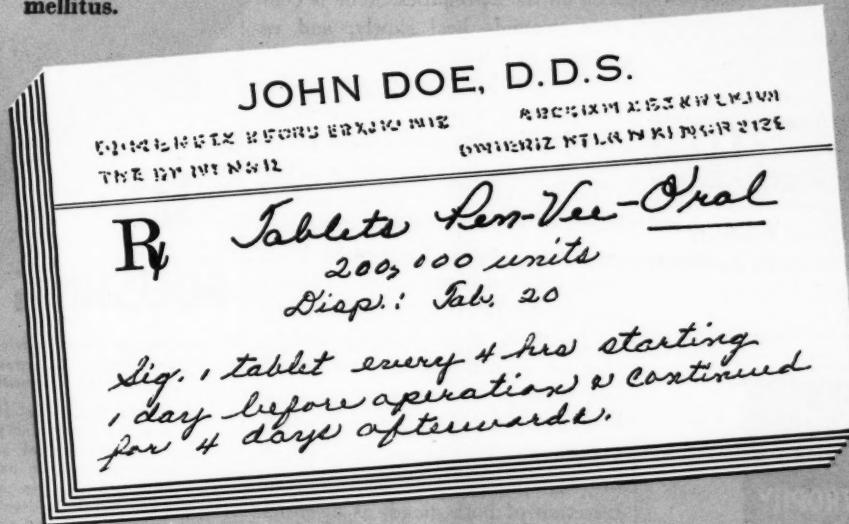


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tumor may be responsible. The role of the anterior pituitary gland is not well understood. Pituitary irradiation and testosterone therapy have not been consistently successful. Adrenal surgery affords the best chance of cure.

When the disease is in an advanced stage the diagnosis is easy. Otherwise, an insidious onset and variable symptoms and signs may make recognition difficult.

Cushing's disease is most common in females of child-bearing age. Symptoms may appear shortly after an emotional crisis or pregnancy or near the menopause. Frequently complaints are fatigue, weakness, obesity, changed appearance, amenorrhea or menstrual irregularities and bruising. Occasionally nervousness, depression, irritability, skeletal pain, and hirsutism may be noted.

Obesity is confined to the head, neck, and trunk. Moon face, buffalo hump, and enlargement of the supraventricular fat pads are characteristic signs. Weight gain may not be noted because of wasting in other tissues.

Atrophy of the corium is responsible for most skin changes. The face is florid and purple striae appear over the trunk. Blotchy marbled skin is seen on the extremities. Acne is common, wounds heal slowly, and resistance to infection is poor.

The most frequent physical finding is muscular wasting. Hypertension, vascular fragility, and ankle edema are frequent. Osteoporosis is a cardinal sign but is not always present. Negative calcium balance may produce renal stones. The fasting blood sugar is usually normal, but a diabetic glucose tolerance curve is obtained.

Objectives of surgery are restoration of adrenal secretion to normal and removal of neoplastic tissue. If a tumor is found, total removal will usually relieve symptoms. If the glands are hyperplastic, 90 to 95 per cent resection of both glands is essential. Subtotal resection is usually done in two stages.

Cope, Oliver, and Raker, John W.: *Cushing's Disease*, *New England J. M.* 253:119-126 (August) 1955.

Contra- Angles



Scannings on the Financial Pages

Some people take warm delight in looking over the financial pages in newspapers. It is pleasant to read how well the economy is operating. Although many businesses, like many dentists, are selling a lot and handling large stacks of money there is a note of "profitless prosperity" in the air. Expenses are breathing down the necks of profits—if you will pardon this horribly mixed up metaphor.

Despite the current inflationary trend I was fascinated to read that one of the large producers of a popular soft drink reported net earnings of 29 million dollars in 1956, while

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LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK

*REG. U. S. PAT. OFF.

a chewing gum maker had net earnings of 11 million dollars. Not bad for people who are making things that nobody really needs to maintain health and well-being. I admit that a cool soft drink and a wad of sweet gum are appealing to the taste. To the glory of the manufacturers of these items, they do not say that either product has nutritive value or health-giving qualities.

Dentists are generally agreed that neither a carbonated drink nor chewing gum is helpful to oral health. There is plenty of evidence that unrestricted eating and chewing of sweet things and drinking soft drinks increase the incidence of tooth decay—and probably other disease. Our weakness as a profession in stating these facts is that we offer nothing as a substitute. It is poor logic and bad public relations to condemn and prohibit anything without offering something to take its place.

Dentists have suggested that fruit beverages be offered to substitute for carbonated drinks. Several gum makers have incorporated chemicals into their product to act as anticaries agents. Unless the fruit juice is fresh, cold, and convenient to buy, it cannot compete with the refreshing soft drinks that are marketed with skill and imagination. And if the gum that is intended to reduce caries does not taste, look, and smell as good as the one that is high in sugar content the oral health appeal will, to use the words of Madison Avenue, have no impact on the buyer.

There is some perverse quirk operating within most of us that makes us hostile to any and all *health* foods. The child resists almost anything that is offered to him as something that is "good" for him. When he grows to man's estate he has lost none of this particular hostility. Anyone who dares practice sound nutritional habits will do well to keep his secret locked into himself. If he does not he risks the ridicule and the suspicion of his best friends. Whoever makes a public avowal or display of his wise food consumption habits is dismissed as a cultist, which in some places is almost as bad as being called a Communist.

Although for the past 25 years I have lived part of the time in the country I cannot qualify as an agriculture expert. I see my neighbors preparing and planting their fields in neat designs and am always awed and fascinated by the miracle of the harvest. My own farming at present consists of an occasional garden or a few fruit trees that supply the birds more than our own larder. Once we had a few chickens and ducks and a couple of hogs, but we found that the promise of "Five Acres and Independence" was slightly overstated—at

least for one who has little stomach for barnyard chores. As I recall, our eggs cost twice as much to produce as we would have to spend to buy them in the village store. The defeathering and eviscerating of the chickens was a noisome and time-destroying project. I mention these dung-spots on my escutcheon to point out that food growing and food processing are big business and not for amateurs.

The farmers that I first knew kept their accounts either in their heads or on the backs of used envelopes. They were individualists who had

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A. A. FINISHERS

S. S. White A. A. Finishers are used for the rapid trimming, fastening and finishing of acrylic restorations, thus providing the laboratory operator with a real time saver. Mandrels are stainless steel—for use in a handpiece or in the lathe chuck.

strong notions and opinions on agricultural subjects and a home-spun touch of meteorology. They planted *what* they wanted, *when* they wanted, by methods of their choice. It is true that many lived and died in hard poverty and quiet desperation, but they did escape Federal bureaucracy. Now everybody tells the farmer that he must be a business man, in fact a specialist. He must have the skills of a fine mechanic and the arithmetical adroitness of a CPA. He must, as well, have the real ability to translate the gobbledegook of

Federal prose, a test of great skill. Few of my present neighbors in the prairie country have a flock of chickens or a vegetable garden. Most of their orchards have been hacked down or are let grow without pruning or care. The day of specialization is upon their heads and they are no longer able to sustain themselves upon the land. They are almost dependent as are my other neighbors in a city apartment.

The farmer has become part of big business. He buys his inorganic fertilizer and his costly machines from

big corporations. He sells his live stock or products to other corporations who are in the big business of processing, packaging, marketing their products without too much regard to anything except a favorable corporate earning statement. There is nothing wrong with profits and I hope to see more of them for more people under the capitalistic system. My worry comes when I feel that often the nutritive value of the food product has secondary concern to the promotional gimmick and the pat slogan.

For example, the idea of a full-course dinner—meat, vegetables, potatoes—packaged in one unit is a splendid thing. There are such packages available on the market. No family would care to be served one every day, but on the occasion when time is short or pressure is upon the household such a prepared parcel of food is an excellent idea. Note well an *idea!* In reality the contents of the packages that I have been exposed to are spare in protein, long on gravy; frugal in vegetables, heavy with soggy

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S. S. White Tenax Wax, a truly superior wax, that has the finest working qualities. It is tough yet the sheets are thinner than the usual base plate wax. Pale pink in color. Sheets are 2-15/16 x 5-5/8 inches. Available in half pound and five pound boxes.

PINK BASE PLATE WAX NO. 9

For base plates and bites use S. S. White Pink Base—Plate Wax No. 9. Remains stable even in hot humid weather. Has fine working qualities. Light pink in color—Sheets are 2-15/16 x 5-5/8 inches. Sold in half pound and five pound boxes.

PINK BASE PLATE PARAFFIN & WAX

Extra tough S. S. White Pink Base—Plate Paraffin and Wax for base plates and bites. Made of pure beeswax and paraffin. It can be used with confidence as a set up wax as well as in general use. Sheets are 2-15/16 x 5-5/8 inches. Available in half pound and five pound boxes.

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S. S. White Yellow Base—Plate Beeswax in very thin sheets for bites, base plates and general use. Like all S. S. White beeswax it is made from the purest selected beeswax and distilled to remove all impurities. Sheets are 2-15/16 x 5-5/8, in half pound and five pound boxes.

YELLOW BITE AND IMPRESSION WAX

S. S. White Yellow Bite and Impression Wax is made of pure beeswax. It is ideal for accurate impressions as it does not change the character of the bite when removed from mouth. Square cakes are 3-3/8 inches. In half pound and five pound boxes.

CROWN STICKY WAX

S. S. White Crown Sticky Wax for holding bridge-piers, pontics, lingual or strengthening bars, clasps, facings, broken vulcanite dentures when making models, etc. Boxes of 18 sticks, 4-1/8" long and 1 lb. box (approximately 150 sticks).

INLAY WAXES BLUE, BLACK, GREEN

S. S. White Blue, No. 4 Green or No. 5 Black Inlay Waxes for gold inlay work using direct or indirect technique. Soften readily. Do not crumble during manipulation. Carve without flaking, chipping or dragging. Blue 12 or 120 sticks to the box. No. 4 Green and No. 5 Black 15 sticks to the box.

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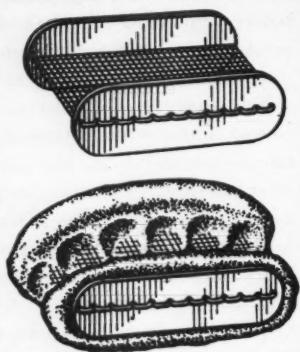
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potatoes. Despite all the advertising, the nutrition-conscious consumer will reject this inadequate package, while the average consumer will buy in quantities because the package is convenient and well merchandised. And the business should prosper because less than 1 per cent of the population knows or cares anything about nutrition. Many people know something about *diet*, but few know anything about *nutrition*.

I have not seen a break-down of the financial affairs of the manufacturers of the prepared and packaged dinner. I would expect it to be a highly profitable business. It would deserve to be if it lived up to the potentialities of the idea and the promises of the promotion.

In looking over the financial pages I see no evidence that the foods and beverages that are "good" for people's health carry their own rewards.

—E. J. R.

Endocrine Reactions During Stress

HANS SELYE, M.D., Ph.D., D.Sc.,
F.R.S.C. (C.), F.I.C.S. (Hon.),
Montreal, Canada

Summary of Observations

To summarize we might say that all agents which act upon the body or any of its parts exert dual effects:

- (1) Specific actions.
- (2) Non-specific or stressor effects.

The stressor acts upon the target (the body or some part of it) directly and indirectly through the pituitary and adrenal glands.

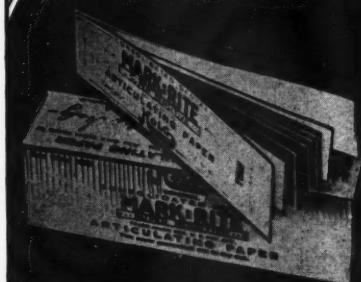
Through some unknown pathway, the "first mediator" travels from the directly injured target area to the anterior pituitary. It notifies the latter that a condition of stress exists and thus induces it to discharge ACTH.

It is quite possible that this "first mediator" of hormonal defense is not always the same. In some instances, it may be an adrenaline discharge, in others a liberation of histamine-like toxic tissue metabolites, a nervous

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impulse or even a sudden deficiency in some vitally important body constituent (such as glucose or an enzyme).

ACTH stimulates the adrenal cortex to discharge corticoids. Some of these, the prophlogistic corticoids (P-C), stimulate the proliferative ability and reactivity of connective tissue; they enhance the "inflammatory potential." Thus, they help to put up

a strong barricade of connective tissue through which the body is protected against further invasion by the pathogenic stressor agent.

However, under ordinary conditions, ACTH stimulates the adrenal glands much more effectively to secrete antiphlogistic corticoids (A-Cs). These inhibit the ability of the body to put up granulomatous barricades in the path of the invaders; in fact, they tend to cause involution of connective tissue with a pronounced depression of the inflammatory potential. Thus they open the way to the spreading of infection.

It is not yet known whether ACTH always stimulates the adrenal glands to produce the various corticoids in the same proportions and always with a great predominance of A-Cs. Certain recent experiments suggest that, depending upon conditions, ACTH may cause the predominant secretion of one or the other of the steroid hormones. However, be this as it may, the somatotropic hormone (STH) of the pituitary gland increases the inflammatory potential of connective tissue, very much as the P-Cs do; hence, it can sensitize the target area to the actions of the latter.

It is possible that the hypophysis also secretes some special corticotrophin which induces the adrenal gland to elaborate predominantly P-Cs; indeed, STH itself may possess such effects, but this has not yet been proved. In any event, even if ACTH were the only corticotrophin, the actions of the corticoids produced under its influence can be vastly different, depending upon "conditioning" factors (such as ACTH), which specifically sensitize the target area for one or the other type of corticoid action. Actually, conditioning factors could even alter the response to ACTH of the adrenal cortex itself, so that its cells would produce more A-Cs or P-Cs. Thus, during stress, one or the other type of effect can predominate.

The fundamental reaction-pattern to topical stressors is a local adaptation syndrome with inflammation, to systemic stressors the general adaptation syndrome. Various modifications of these two basic responses constitute the essence of most diseases.

Slightly Controversial

There is ample evidence in the literature* to support the belief that small amounts of sodium fluoride in filling materials would be beneficial. How? By supplying a soluble source of fluoride in ions sufficient to bathe the cavity walls adjacent to the filling.

There will be additional evidence on this subject. It all points to the fact that dentistry is approaching an era of new concepts, new ideas, and new products to more closely achieve our ultimate goal, control of caries!

Let us quote from patent #2,665,218 on this subject. "Of great use is this cement where there are deep pits and fissures in deciduous or permanent teeth and in newly erupting teeth . . . an insertion of these (fillings) for a period of say from one to six weeks may render the tooth quite immune to decay and will act to arrest caries."

In September 1955, we released a filling material to approximately one hundred key dentists in all sections of the country. At the end of one year, all received a questionnaire. All dentists reporting observed (1st) no irritation or bad effects; (2nd) no recurrent decay during the period observed.

It is interesting to note that a few dentists used this material as pupal linings although it is not as yet recommended for this use. The literature indicates that this may be sound practice.

Inasmuch as there was considerable authoritative criticism, this material was held back until further evidence in the literature indicated its release. We feel that is now the case and recommend that you read the ad on this new product FLUORON.

Our personal recommendation would be to use it on all those cases of rampant decay that we see so frequently, and which are practically impossible to control. Our procedure would be this. Tooth by tooth, remove all decay without consideration of cavity form. Where cavity is deep, place a generous protective lining of Kal-Drox (powder and liquid). Where cavity is shal-

low, place a lining of Liquid Kal-Drox. Then fill the tooth with FLUORON. After the mouth has been entirely treated by these fillings, let them remain intact for at least six weeks. This allows the fluoride to attain the maximum effect. A longer period does no harm.

At the end of this period, recurrent caries should be entirely under control. The teeth may now be filled with more permanent filling or inlays. During the preparation for these permanent fillings, it is not necessary to remove all of the FLUORON filling except at the cavo-surfaces angles.

It occurs to us that such a FLUORON filling treatment should precede all mouth rehabilitation work, as insurance against further decay. Also it should have a place in preventive odontology.

A further use certainly should be preliminary to the filling of extensively decayed gingivals, especially where the decay is above the gum line. Allow these FLUORON fillings to remain as long as possible in order to have the full benefit of the fluoride therapy.

Also available, but on an experimental basis only, is FLUOR-PAC, a silver amalgam filling containing sodium fluoride; FLUOR-OX, a zinc oxide eugenol cement containing sodium fluoride; and FLUOR-CEM, a zinc cement containing sodium fluoride.

All of these products are available through your dealer, or we will send you a generous sample for \$1.00.

*References—J.A.D.A. Jan. 1955, 50-14
J.A.D.A. Jan. 1955, 50-17; J.D.R. June 1955,
34-351; J.A.D.A. June 1955, 50-681 J.D.R.
June 1955, 34-357

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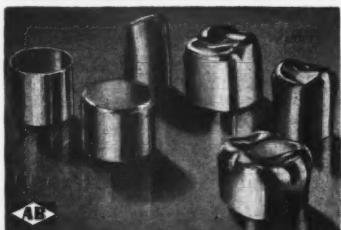
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Outlook Suggested by These Observations

Pasteur, Koch and their contemporaries introduced the concept of specificity into medicine, a concept which proved to be of the greatest heuristic value up to the present time. Each individual well-defined disease, they held, has its own specific cause. It has been claimed by many that Pasteur failed to recognize the importance of the "terrain" being too preoccupied with the pathogen (microorganism) itself. His work on induced

immunity shows that this is incorrect. Indeed, allegedly at the end of his life he said: "le germe n'est rien, c'est le terrain qui est tout."

Specific Adaptive Reactions—The theory which directed the most fruitful investigations of Pasteur and his followers was that the organism can develop specific adaptive reactions against individual pathogens and that by imitating and complementing these, whenever they are short of optimal, many of the diseases which are due to specific pathogens can be treated.

Negation of Specific Adaptive Reaction—To our mind, the general adaptation syndrome (G-A-S) represents, in a sense, the negative counterpart, or mirror image, of this concept. It holds that many diseases have no single cause, no specific pathogen, but are largely due to nonspecific stress, and to pathogenic situations which result from inappropriate responses to such nonspecific stress.

Dissection of Traditional Concepts—Our blueprint of the pathways through which stress acts may be partly incorrect; it is certainly quite incomplete. But in it we have a basis for the objective scientific dissection of such time-honored, but hitherto rather vague, concepts as the role of "reactivity," constitution and resistance, or "nonspecific therapy," in the genesis and treatment of disease.

Prediction—We would like to reiterate our opinion that research on stress will be most fruitful if it is guided by the theory that we must learn to imitate—and if necessary to correct and complement—the body's own autopharmacologic efforts to combat the stress factor in disease.

Adapted from *Current Researches in Anesthesia and Analgesia* 35:191 (May-June) 1956.

Fabrication of Acrylic Jacket Crowns Without Laboratory Facilities

Commander Eymard L. Doyle, (DC) USN

A METHOD that is felt to be functionally and esthetically suitable for restoration of the function and esthetic appearance of an anterior tooth that is too badly broken down to be restorable by normal operative procedures involves the preparation and fabrication of an acrylic jacket crown using the cold-cure acrylic resins. This technique is adapted for posterior as well as for anterior teeth.

Common Disadvantages—In the use of acrylic in jacket crown prostheses the following disadvantages are commonly found:

(1) Due to the resiliency of the

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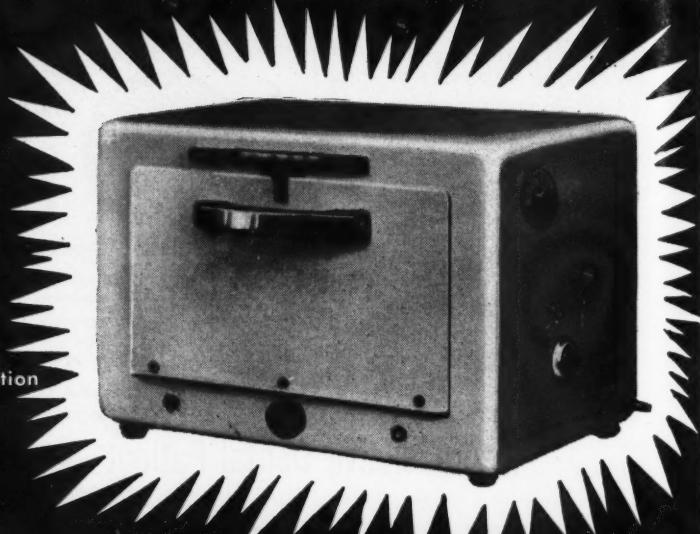
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material and to masticatory stress, the jacket crown will eventually spread or give at the gingival margin.

(2) In time the material will show the ravages of wear and necessitate replacement in order to maintain the tooth in proper function.

Measure to Overcome Disadvantages—By employing a gold casting with a labial window cut for the reception of acrylic the disadvantages of acrylic in the jacket crown may be overcome. The resulting crown will remain snugly adapted at the gingival margin and resist wear on the incisal and lingual surfaces, yet maintain an esthetic appearance labially.

Acrylic Crown for Temporary Use—This technique is a compromise procedure that can be completed when laboratory facilities are not available. Where a gold and acrylic crown or a porcelain jacket crown is to be constructed, this acrylic jacket crown is highly recommended for use during the time the more permanent jacket is being made.

Steps in Procedure

1. The tooth is prepared in the manner best suited to the operator, except that a shoulder is not desirable.

2. A chamfer finish, or merely a taper finish to the gingival attachment, is employed.

3. In lieu of the gold casting at the gingival margin, an annealed copper band collar is used to obtain a definite finish line at the gingival attachment and also to help prevent spreading of the acrylic and eventual leakage beneath the gingiva. It will also impart strength to the finished jacket crown.

4. An annealed copper band that fits snugly at the gingival attachment is contoured accurately to the preparation. The gingival adaptation is checked with an explorer.

5. A cut is made from the incisal edge down toward the gingival margin so that only about 1 millimeter remains above the gingiva on the labial, incisal, and distal sides, and 3 millimeters on the lingual. Two or

three cuts are placed on the lingual part of the band that extends above the gingiva, to give a mechanical lock for the acrylic.

Application of Acrylic—1. The copper band collar is placed in position on the tooth beneath the gingiva.

2. The tooth is isolated with cotton rolls and dried thoroughly.

3. With a sable brush, a thin mix of cold-cure acrylic is painted on the tooth and copper band.

4. A small amount of acrylic powder and liquid is placed in a mixing jar; when it has set long enough to be easily handled, it is placed on the tooth and contoured with the fingers.

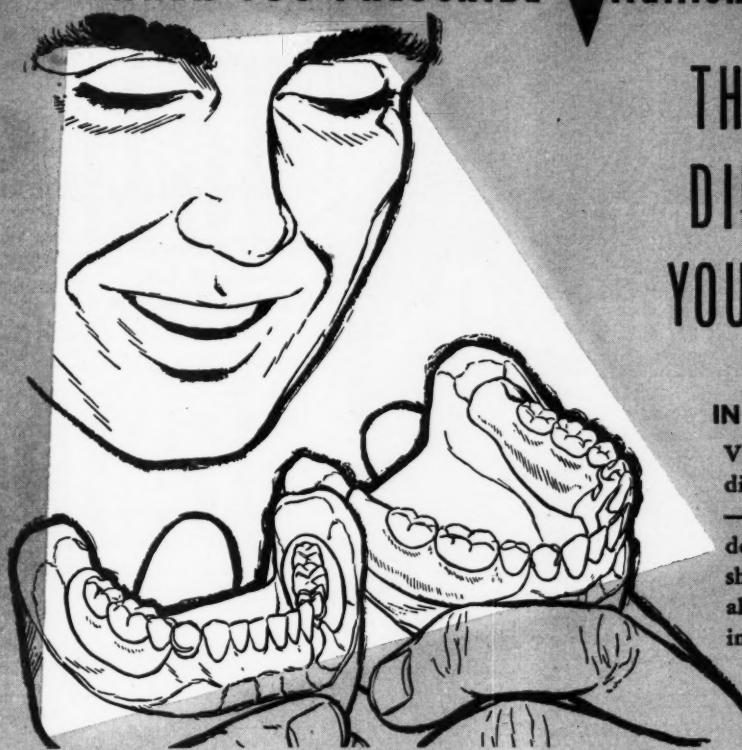
5. The patient closes his mouth in centric occlusion and the assistant sprays water on the area until the acrylic hardens.

6. The acrylic is removed with a crown remover and a thin mix of acrylic is painted on the area of junction of copper band and crown and any other area requiring it.

Final Steps—Discs and burs are

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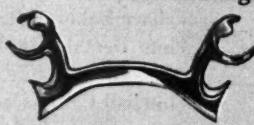
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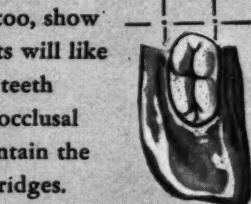
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used in carving, care being taken not to destroy the mesial and distal contact. The crown is tried on the tooth. Centric occlusion is checked for high spots and lateral and protrusive excursions, and the crown is polished with pumice and whiting. The exterior of the jacket crown is lubricated and the prepared tooth dried and cemented in place.

Summary

A technique for the preparation and fabrication of an acrylic jacket crown using an annealed copper band

and cold-cure acrylic resin is recommended for use at dental activities without laboratory facilities, or for construction of a temporary crown to be worn while a gold and acrylic crown is being completed. It is believed that by using the copper band collar at the gingival margin, spreading and subsequent leakage will be greatly eliminated, added strength imparted, and a definite gingival finish established. A functional and esthetic acrylic jacket crown can thus be made for patients while in the chair. At any later date, a more per-

manent gold and acrylic crown can be constructed without need of altering the existing preparation.

Adapted from *United States Armed Forces Medical Journal* 7:693 (May) 1956.

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